THE JOURNAL
OF THE
Kansas Medical Society

Vol. XXVI. TOPEKA, KANSAS, MARCH, 1926 No. 3

Published Monthly under direction of the Council. Annual Subscription, $2. Single Copy, 20c.
608 Kansas Avenue, Topeka, Kansas

Entered as second-class matter May 26, 1914, at the Postoffice at Topeka, Kansas, under the Act of March 3, 1879. Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on July 2, 1918.

CONTENTS

ORIGINAL ARTICLES—

Malignant Cystic Ovarian Tumors.—John L. Grove, M.D., Newton 71

The Radiographic Diagnosis of Early Pulmonary Tuberculosis—Roland G. Breur, A. B., M. D., Norton, Kansas 75

The Evolution of Science—Sara G. Stephenson, M. D., Topeka, Kan. 82

The Relation of the Clinician to the Laboratory—Albert S. Welch, A. B.,M. D., Kansas City, Mo. 85

Bell Memorial Hospital Clinics—
Clinic of R. H. Wahl, M. D. 87
Clinic of Hugh L. Dwyer, M. D. 89

EDITORIAL 91

MISCELLANEOUS—
Chips 93
Protest the Sheppard-Towner Act 95
Kansas Medical Laboratory Association 96
Societies 98
Personals 99
Medical School Notes 99
Deaths 100
Books 100
The Care of Syringes and Needles 101
Research Results 102
Our National Doctor's Bill—The Public's Debt xvi

CALCREOSE

AT THIS SEASON of the year, when coughs, colds, bronchitis and other respiratory affections are prevalent, a reliable creosote product that is well tolerated and practically free from gastric disturbances is doubly welcome.

Calcreose confers all of the benefits of creosote medication with the undesirable effects largely eliminated. It is a loosely combined product of creosote (about 50%) and hydrated calcium oxide.

Calcreose can be given in large doses for long periods without apparent difficulty

In cases of idiosyncrasy to creosote it is recommended that the initial dose of Calcreose be small during the first two or three days with gradual increase until tolerance is established

Powder: Tablets: Solution
Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY

A Medical Education

is seldom completed in college. There is some new development in medical science almost every day. Iletin, radium and x-ray are recent examples, A physician must read to keep abreast of the new appliances and remedies.

As a rule, the FIRST authentic information you obtain regarding the use and price of new instruments; the location of clinics and institutions for special treatment; the discovery and application of various therapeutic remedies, is found in the advertising pages of your own STATE MEDICAL JOURNAL.

Here are a few quotations from recent advertisements in the State Journal:

"Our x-ray department includes the new 280,000 volt deep therapy apparatus."

"Gelatin contains 5.9% of lysine, the natural amino-acid so essential to human growth."

"Authorities say the proportion of calories, proteins and calcium is greater in oats, than any other grain."

"Calcreose differs from Creosote in that it apparently does not have any untoward effect on the stomach."

You will surely miss much that is NEW, if you fail to READ THE ADVERTISEMENTS.

THE DEFENSE FUND

OF THE

KANSAS MEDICAL SOCIETY

For the Defense of a Member Against Suits for Alleged Malpractice

The regular annual dues cover all expense to members.
Furnishes expert legal advice and defense.
Pays all expenses for defense of suit.

No attorney should be employed by a member of the Society who intends to ask the assistance of the Defense Board in defending his case, until he has reported to the chairman or other member of the Board and received advice from him. An attorney is regularly employed by the Board to take charge of all of its legal business and his immediate attention will be given to each case reported. Judgment cannot be taken in cases of this kind until thirty days after filing the suit. This gives abundant time for thorough examination and consultation before filing answer to the complaint.

Secretaries of County Sosieties should have a supply of blank applications for defense on hand.

Defense Board: Chairman, Dr. O. P. Davis, 917 N. Kansas Ave., Topeka, Kan.
Dr. D. R. Stoner, Ellis, Kan.
Dr. C. S. Kenney, Norton, Kan.

KANSAS MEDICAL SOCIETY

Chartered by the Territorial Legisla ture of Kansas, February 19, 1859

PRESIDENT. . . . . .F. A. CARMICHAEL, M. D. . . . . .OSAWATOMIE

Secretary—J. F. HASSIG, M. D.—Kansas City **Treasurer—GEO. M. GRAY, Kansas City**

Denfense Board—Dr. O. P. Davis, Chairman; Dr. D. R. Stoner, Ellis; Dr. C. S. Kenney, Norton.

Executive Committee of Council—Dr. F. A. Carmichael, chairman, Osawatomie; Dr. D. F. Hassig, Kansas City; Dr. George M. Gray, Kansas City; Dr. C. P. Davis, Topeka.

Committee on Public Health and Education—Dr. E. G. Brown, Chairman, Topeka; Dr. M. O. Nyberg, Wichita; Dr. James W. May, Kansas City; Dr. H. E. Haskins, Kingman; Dr. C. D. Blake, Hays; Dr. L. B. Gloyne, Kansas City.

Committee on Public Policy and Legislation—Dr. A. D. Gray, Chairman, Topeka; Dr. C. S. Huffman, Topeka; Dr. J. A. Milligan, Garnett; Dr. F. A. Carmichael, President ex-officio; Dr. J. F. Hassig, Secretary ex-officio.

Committee on School of Medicine—Dr. L. F. Barney, Chairman, Kansas City; Dr. E. D. Ebright, Wichita; Dr. C. H. Jameson, Hays; Dr. Alfred O'Donnell, Ellsworth; Dr. F. A. Trump, Ottawa.

Committee on Hospital Survey—Dr. Geo. M. Gray, Chairman, Kansas City; Dr. W. M. Mills, Topeka; Dr. H. L. Snyder, Winfield.

Committee on Medical History—Dr. W. E. McVey, Chairman, Topeka; Dr. W. S. Lindsay, Topeka; Dr. O. B. Walker, Salina.

Commitee on Scientific Work—Dr. J. F. Hassig, Chairman, Kansas City; Dr. H. L. Chambers, Lawrence; Dr. J. L. Everhardy, Leavenworth.

Committee on Necrology—Dr. E. E. Liggett, Chairman, Oswego; Dr. J. F. Hassig, Kansas City; Dr. W. E. McVey, Topeka.

Members of Component County Societies are members of the Kansas Medical Society. Physicians residing in counties where no County Society exists may join the society of an adjoining county. Physicians residing where no County Society exists, who are members of a district or other independent society approved by the Council, may be admitted to membership.

ANNUAL DUES $5.00, due on or before February 1st of each year.

Dues should be paid to the Secretary of the Compon ent County Society, or, if not a member of a County Society, to the Secretary o f the Kansas Medical Society.

OFFICERS FOR 1926

COUNTY	PRESIDENT	SECRETARY	MEETINGS HELD
Allen		P. S. Mitchell, Iola	
Anderson	A. J. Turner, Garnett	J. A. Milligan, Garnett	2nd Wednesday
Atchison	E. T. Shelly, Atchison	T. E. Horner, Atchison	1st Wed. ex. July and August
Barton	H. W. Jury, Claflin	M. Morrow, Great Bend	1st Tuesday, Jan., Apr., June, Oct.
Bourbon	R. O. Crume, Ft. Scott	C. L. Mosley, Ft. Scott	2nd Monday
Brown	W. G. Emery, Hiawatha	R. T. Nichols, Hiawatha	2nd Friday
Butler	J. C. Bunten, Augusta	L. L. Williams, El Dorado	2nd Friday
Central Kansas	J. B. Carter, Wilson	H. S. O'Donnell, Ellsworth	Dec., March, June, Sept.
Cherokee	R. C. Lowdermilk, Galena	W. H. Iliff, Baxter Springs	2nd Monday
Clay	X. Olsen, Clay Center	E. C. Morgan, Clay Center	2nd Wednesday
Cloud	Andrew Struble, Glasco	R. E. Weaver, Concordia	Last Thursday
Coffey	H. T. Salisbury, Burlington	A. B. McConnell, Burlington	
Cowley	H. H. Jones, Winfield	M. J. Dunbur, Winfield	1st Tues. ex. July, Aug., Sept.
Crawford			3rd Thursday
Decatur-Norton	W. J. Lowis, Colby	R. G. Breuer, Norton	Called
Dickinson			
Doniphan		W. M. Boone, Highland	1st Tues. Jan., Apr., July, Oct.
Douglas			1st Thursday
Elk	R. C. Harner, Howard	F. L. Depew, Howard	Called
Finney			
Ford	C. E. Bandy, Bucklin	W. F. Pine, Dodge City	Last Wednesday
Franklin	H. W. Gilley, Ottawa	F. A. Trump, Ottawa	
Harper		M. B. Flowers, Harper	3rd Wed., Mar., June, Sept., Dec.
Harvey		H. M. Glover, Newton	1st Monday
Jackson	M. S. McGrew, Holton	C. A. Wyatt, Holton	1st Wed., Jan., Apr., July., Oct.
Jewell	J. E. Hawley, Burr Oak	C. W. Inge, Formoso	
Johnson	C. H. Lester, Olathe	D. E. Bronson, Olathe	
Kingman	R. W. Springer, Kingman	H. E. Haskins, Kingman	2nd Thursday ex. summer months
Labette	O. H. Ball, Dennis	J. T. Naramore, Parsons	4th Wednesday
Leavenworth			1st Monday
Lincoln		M. Newlon, Lincoln	2nd Thursday
Linn	J. R. Shumway, Pleasanton	H. L. Clarke, LaCygne	2nd and 4th Fridays
Lyon			1st Tuesday
Marion			2nd Wednesday
Marshall	J. L. Hausman, Marysville	J. W. Randell, Marysville	Last Thurs., July, Oct., Jan., Apr.
Meade-Seward	G. S. Smith, Liberal	J. W. Messersmith, Liberal	
Mitchell			
Montgomery	E. C. Wickersham, Ind	J. A. Pinkston, Independence	2nd Friday
McPherson			
Nemaha		S. Murdock, Sabetha	Last Thursday every other month
Neosho	G. Ashley, Chanute	J. N. Sherman, Chanute	Second Monday
Osborne	J. F. Henshall, Osborne	S. J. Schwaup, Osborne	
Ottawa	J. D. Vermillion, Tescott	J. F. Brewer, Minn	
Pawnee			2nd Tuesday
Pratt		E. H. Ireland, Coats	1st Monday
Reno	Irl E. Hempsted, Hutchinson	H. E. Blasdel, Hutchinson	4th Friday
Republic			2nd Thursday in November
Rice	H. R. Ross, Sterling	C. E. Fisher, Lyons	Last Thursday
Riley	A. H. Bressler, Manhattan	J. T. Mathews, Manhattan	2nd Monday
Rush-Ness	L. A. Latimer, Alexander	E. N. Sulis, McCracken	
Saline	P. A. Loyd, Salina	P. Brown, Salina	2nd Thursday
Sedgwick			1st and 3rd Tuesday
Shawnee	C. E. Joss, Topeka	E. G. Brown, Topeka	1st Monday
Smith	O. C. Reed, Kensington	H. Haerle, Athol	Called
Stafford	T. W. Scott, Stafford	J. T. Scott, St. John	2nd Wednesday
Sumner	A. R. Burgess, Wichita	W. H. Neel, Wellington	Last Thursday every quarter
Washington		W. M. Earnest, Washington	
Wilson	J. L. Moorhead, Neodesha	E. C. Duncan, Fredonia	2nd Monday.
Woodson		M. S. Reynolds, Yates Center	
Wyandotte	C. E. Coburn, Kansas City	Gea. H. Hobson, K. C.	Every 2nd Tues. ex. summer month

DR. L. O. NORDSTROM
Surgeon
Belleville, Kansas

DOCTORS WILLIAMS AND BOGGS
Eye, Ear, Nose and Throat
Mills Building TOPEKA, KANSAS

HUGH WILKINSON, M. D.
Parctice Limited Exclusively to Surgery and Consultation
430 Brotherhood Bldg., Kansas City, Kansas

THE
KANSAS RADIUM INSTITUTE
618 Mills Bldg
TOPEKA, KANSAS

E. S. EDGERTON, M. D.
Surgeon
Suite 910 Schweiter Bldg. WICHITA, KANSAS

W. F. BOWEN, M. D.
MILTON B. MILLER, M. D.
Surgeons
212 Central National Bank Bldg.
Telephone 6120 Topeka, Kansas

THE
JANE C. STORMONT HOSPITAL
SIXTY BEDS
Both Medical and Surgical Cases Received
Address the Superintendent TOPEKA, KANSAS

OPIE W. SWOPE, M.D.
Radiologist
Superficial and Deep X-Ray Therapy
Radium Therapy X-Ray Diagnosis
713 First National Bank Bldg.,
WICHITA, KANSAS.

DR. OTTO KIENE
Surgeon
CONCORDIA, KANSAS

W. P. CALLAHAN. M. D.
Surgeon
Suite 929 Beacon Building WICHITA, KANS.

DR. LESLIE LEVERICH
Practice limited exclusively to Obstetrics
Normal and Operative
430 Brotherhood Bldg., Kansas City, Kansas

DR. ARTHUR D. GRAY
Mills Building, Topeka, Kansas
GENITO-URINARY DISEASES AND UROLOGY

M. S. GREGORY, M. Sc., M. D.
Neuropsychiatry
(Stammering treated)
1204 Medical Arts Bldg. Oklahoma City

Phones: Off., Harrison 2668 Off., Harrison 2668
Res., Delaware 1200 Res., Fairfax 0771
J. L. McDERMOTT, M. D.
C. E. VIRDEN, M. D.
X-Ray and Radium
Suite 1130 Rialto Bldg. Kansas City, Mo.

DRS. MILLARD AND GODDARD
Practice Limited to
DERMATOLOGY
812 Kansas Avenue Topeka, Kansas

J. A. H. WEBB, M.D.
X-Ray
310 Schweiter Bldg., Wichita, Kansas

DOCTOR LA VERNE B. SPAKE

Eye, Ear, Nose and Throat

322 Brotherhood Bldg., KANSAS CITY, KAN.

DR. GEO. C. MOSHER

Obstetrics and Gynecology

Hospital Facilities Kansas City, Mo.

J. F. GSELL, M. D.

Eye, Ear, Nose and Throat

Suite 511
The Beacon Building Wichita, Kansas

CHARLES M. BROWN, M. D.

Practice limited to diseases of the
EYE, EAR, NOSE and THROAT

430 Brotherhood Bldg., Kansas City, Kansas

CHAS. S. HERSHNER, M.D

Practice Limited to Diseases of the Rectum

Hospital Facilities Esbon, Kansas

RAYMOND G. HOUSE, M.D.

Practice limited to
Dermatology

405 Schweiter Bldg., Wichita, Kansas

E. A. Reeves, M. D.

Obstetrics and Gynechology

322 Brotherhood Bldg.

Hospital Facilities Kansas City, Kans.

DR. S. GROVER BURNETT

315 East Tenth Street KANSAS CITY, MO.
Private Sanitarium Care for
MENTAL AND NERVOUS DISEASES, MORPHINISM AND ALCOHOLISM
Phones: Hyde Park, 4800; Harrison, 8990.
Patients met at train on notice

G. W. JONES, A. M., M. D.

Diseases of the Stomach
Surgery and Gynecology

Lawrence Hospital
and Training School LAWRENCE, KANSAS

ALFRED O'DONNELL, M.D.

Surgeon

ELLSWORTH, KANSAS.

J. F. HASSIG, M. D.

SURGEON

804 Elks Bldg. Kansas City, Kansas

C. S. NEWMAN, M.D.
Surgeon

615 N. Bdwy. Pittsburg, Kan.

EUGENE P. SISSON, M.D.

Diseases of Children
Infant Feeding.

800 Mass. St. Lawrence, Ks.

DEAR DOCTOR:

If you need any supplies—Drugs, Books, Instruments, Surgical Dressings, Electrical Apparatus, Food Preparations—or if you have a patient to send to a hospital, read the Advertisements in this Number before giving your order.

It will make money for the JOURNAL and save money for you.

WICHITA CLINICAL LABORATORY, Wichita, Kansas

All Kinds of Clinical Analyses

Wassermann, Blood Chemistry, Autogenous Vaccines
Information, containers and prices on request.

Wichita Clinical Laboratory.

Phone Market 3664 J. D. Kabler, A B. Director. Schweiter Bldg., Wichita, Kan.

The Trowbridge Training School

A home school for nervous and backward children.
The best in the West.

E. HAYDN TROWBRIDGE, M. D., 900 Chambers Bldg., Kansas City, Mo.

DR. W. T. McDOUGALL

Laboratory for Clinical Diagnosis, Blood Work, Wassermann's, Bacteriological Work, Tissue Examinations.
PASTEUR TREATMENT, 21 doses each with sterile syringe, and ready for administration at the Physician's office. Phone or telegraph orders to

Both Phones DR. W. T. McDOUGALL, Kansas City, Kansas

THE EXCELSIOR SPRINGS SANITARIUM

Excelsior Springs, Mo.

For the treatment of Bright's Disease, Diabetes, Rheumatism and Gastro Intestinal diseases, etc. Diet, Mineral Waters, Mineral Water Baths, Physico Therapy.

R. W. Prather, M. D., Supt.
Medical Directors—C. H. Suddarth, M. D.; J. E. Baird, M. D.; J. E. Musgrave, M. D.

Wards—16 Beds General—27 Rooms

Maternity Department—12 Rooms

Christ's Hospital

TOPEKA, KANSAS

TRAINING SCHOOL
Miss Edith White, Directress

Miss Mary Lovejoy, R. N.
Superintendent

Offerings to the God of Chance

The professional man who has devoted the greater part of his life to his profession, building an income and reputation; offers his life's work, reputation, good name, practice, home and all his worldly possessions to the God of Chance when he overlooks the safeguarding of his greatest hazard, his professional liabilities.

Medical Protective Service has been tested twenty-two thousand times, in that many claims and suits, in the past twenty-seven years. The following is just a sample of appreciation for the service.

"I surely am grateful to the Medical Protective Company and have had perfect confidence in them all of the time. As I told the other doctors here if the policy premium was multiplied by ten I wouldn't be without it and anyone who has not gone through a suit cannot judge as to what it means to know somebody is with you, and constantly fighting for you, while you yourself are tending to your ordinary business."

You cannot lose with a Medical Protective Contract; you can without it.

For Medical Protective Service have a Medical Protective Contract

THE
MEDICAL PROTECTIVE COMPANY
OF
FORT WAYNE, INDIANA

THE RETREAT

Established 1905 **Capacity 50 Beds**

A private sanatorium for the treatment of nervous and mild mental cases. It occupies a twenty-acre tract of natural timber, orchards and gardens in the best residential district of Des Moines. Nine modern buildings offer suitable accommodations for patients, physicians and employes.

All modern and ethical methods for diagnosis and treatment of nervous and mental disorders, including psychotherapy, occupational therapy, hydrotherapy, massage, diet and properly regulated rest, exercise and amusement.

STAFF

Russell C. Doolittle, M. D., Physician in Charge
Julia F. Hill, M. D., Assistant Physician
John C. Doolittle, M. D., General Director
Sydney L. Macmullen, Business Manager.

Literature and prices on request.

28th & Woodland **Des Moines, Iowa** **Phone Drake 85**

Official and Exclusive Distributors

KELLEY-KOETT X-Ray Apparatus

in the State of Kansas

THE DICK X-RAY CO.

542 RIDGE BLDG.

KANSAS CITY, MO.

Everything in X-Ray and Physiotherapy

Burdick Lamps
Morse Wave Generators
Engeln Diathermia Apparatus
Supplies and Service

PARKE, DAVIS AND COMPANY

NEO-SILVOL

A COLLOIDAL COMPOUND OF SILVER IODIDE

Cleanly, Non-irritating, Germicidal

NEO-SILVOL appeals to discriminating physicians and is becoming increasingly popular with the profession for the reason that it is an effective germicide, does not cause irritation, and does not produce unsightly stains on the clothing or skin and mucous membrane.

Clinically, Neo-Silvol is very valuable in inflammatory infections of the eye, ear, nose and throat, in 10- to 25-per-cent solutions. In gonorrheal ophthalmia 25- to 50-per-cent solutions may be required.

In gonorrhea in the early stages solutions of 5 per cent of Neo-Silvol may be employed as injections. After the pain has subsided and the discharge has lessened, solutions of 10 to 25 per cent should be utilized. Urethral irrigations with a 1-per-cent solution of Neo-Silvol are preferred by many. Cystitis, especially of the acute type, occurring in little girls, may be treated with a few urethral injections of a 10-per-cent aqueous solution of Neo-Silvol. It is of value in vaginitis, cervicitis, etc., in 5- to 50-per-cent strength, depending on the severity of the condition. It may be tried in 1- to 3-per-cent solution for colonic irrigations.

Neo-Silvol is supplied in 1-ounce and 4-ounce bottles and in 6-grain capsules, 50 to the bottle. The contents of one capsule dissolved in a fluid drachm of water makes a 10-per-cent solution. An ointment of Neo-Silvol, 5%, in small collapsible tubes with elongated nozzle, and Vaginal Suppositories of Neo-Silvol, 5%, with a glycero-gelatin base in soft tin capsules in boxes of twelve, may also be had.

PARKE, DAVIS & COMPANY
DETROIT, MICHIGAN

NEO-SILVOL HAS BEEN ACCEPTED FOR INCLUSION IN THE N. N. R. BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION.

What is Nonspi?

NONSPI is an antiseptic liquid for Axillary Hyperidrosis which you can recommend to your patients with absolute confidence. It is a preparation which destroys armpit odor by removing the cause—excessive perspiration. This same perspiration, excreted elsewhere through the skin pores, gives no offense, because of better evaporation.

NONSPI has for years been used by innumerable women everywhere and is endorsed by high medical authority in America and Europe.

Physicians, surgeons and nurses find the regular use of NONSPI insures immaculate underarm hygiene and personal comfort, so essential to those who come in contact with the ill and sensitive.

To keep the armpits normally dry and absolutely odorless, NONSPI need be applied, in the average case, but twice a week.

50c a Bottle, at Toilet and Drug Counters.

Send for Free Testing Samples

THE NONSPI COMPANY
2695 Walnut Street, Kansas City, Missouri
Send free NONSPI samples to

*Name*_____

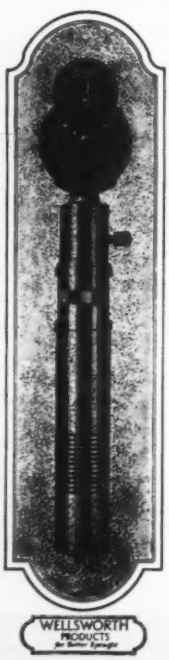
*Address*_____

The Dupray Laboratory

Pathology, Bacteriology, Serology, Physiological Chemistry, including Blood Chemistry, Basal Metabolism.

Information, containers and prices on request.

HUTCHINSON, KANSAS
306-309 Hoke Bldg.



Wellsworth-DeZeng Giantscope

A Clearer Detailed View of the Fundus

With this new Giant Ophthalmoscope a view of the fundus can be obtained which surpasses in clearness and wealth of important details that of any previous hand ophthalmoscope, resulting in a quicker and more thorough diagnosis.

The illumination, a powerful concentrated light under perfect control, is many times greater than that of other ophthalmoscopes.

White, Red Free and Daylight illuminations are instantly available in an intensity which assures perfect results.

Wider Angle of View—Increased Effective Illumination—Minimized Corneal Reflex—all assured by the new unbreakable noncorroding metal mirror.

New Adjustable Lamp permits the locating of filament in any position required.

A wide lens range of lenses from Plus 20D to Minus 20D.

No. 143—Giantscope, Complete in Case_____$125.00

Inquire at nearest Wellsworth Branch

American Optical Company

Factories at Southbridge, Cambridge, Worcester, Mass., and Camden, N. J.
Sales Headquarters: 70 West 40th St., New York, Branches in principal cities

Measuring by the Yardstick of Optical Values

ONE of the various branch offices of Riggs Optical Company is located conveniently near you. It can give you the service you naturally demand of a first class prescription house. It can and will give you even more than that.

In each of our managers you will find a combination of highest skill and the sincere desire to serve. Riggs managers are schooled in the systematic supervision of prescription work, and can fill your ℞ accurately in the shortest possible time.

A trial will convince you that Riggs service is the best.

Riggs Optical Company

EXCLUSIVELY WHOLESALE

SALINA LINCOLN	WICHITA KANSAS CITY	PITTSBURG, KAN. OMAHA	
Fort Dodge	Galesburg	Portland	Oklahoma City
Waterloo	Mankato	Tacoma	Denver
Cedar Rapids	Council Bluffs	Seattle	Pueblo
Sioux City	Great Falls	Spokane	Boise
Iowa City	Madison, Wis.	Oakland, Calif.	Reno, Nevada
Hastings	Green Bay	San Francisco	Ogden
Rockford, Ill.	St. Paul, Minn.	Los Angeles	Salt Lake City
Quincy	Sioux Falls	Santa Ana	Pocatello
Appleton	Helena		Fargo

Dr. Clyde O. Donaldson

Radium & X-Ray Laboratory

Special attention to treatment of malignancies

High Voltage X-Ray Equipment

Lathrop Building Kansas City, Mo.

D-ZERTA is a sugar-free jelly powder, which simply by the addition of boiling water and subsequent cooling yields a tempting fruit flavored jelly. D-Zerta is appetizing in appearance, of appealing aroma and agreeable to the palate; a most delicious dessert especially recommended for the diet in diabetic and obesity cases.

20 SERVINGS—$1.00

Assorted flavors in each package

THE JELL-O COMPANY, Inc.

Le Roy, N. Y. Bridgeburg, Can.

D=Zerta

A Sugar-free Dessert

HELIOTONE

the Simplified Therapeutic Lamp

The Heliotone Lamp has been designed to meet the requirements of the modern office. After months of careful research, it has been offered to the medical profession as a distinct improvement over any therapeutic lamp heretofore offered. The chief factor of the Heliotone Therapeutic Lamp is its efficiency and ease of operation. Very sturdy in construction, yet very light, it is easy to manipulate during treatments. The special disk mounted at the top of the upright standard is new and assures the success of this lamp.

Write for special circular fully describing this new therapeutic appliance.

Thirty Days Free Trial

The Heliotone Therapeutic Lamp is unconditionally guaranteed and will be shipped to you on a thirty day free trial. If the lamp proves unsatisfactory, it can be returned at our expense. If satisfactory, you may either remit the purchase price in cash or handle it on the 10 easy monthly payment plan.

9CJ2385. Heliotone Therapeutic complete for 110 Volts A. C. or D. C. - $55.00

FRANK S. BETZ CO.
Hammond, Ind.
634 S. Wabash Ave.
CHICAGO, ILL.

6-8 West 48th St.
NEW YORK CITY
Santa Fe Building
DALLAS, TEX.

Please send particulars of your 30 days free trial on the Heliotone Therapeutic Lamp:

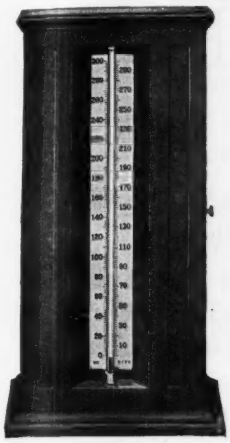
Name .....

Address .....

City ..... **State** .....

B-D PRODUCTS

Made for the Profession



B-D MANOMETER -- WALL TYPE

CERTIFIED

A mercurial Sphygmomanometer designed for office, wall or desk in genuine American Walnut.

Certification by comparison with a master manometer, verified by the National Bureau of Standards, insures accuracy.

A practically imperishable release valve, in which rubber disks are eliminated, controls the mercury column to a fraction of a millimeter.

An unbreakable reservoir and easily cleaned manometer tube assures long service.

B-D Manometers are also made in Pocket, Hospital and Portable Types

Descriptive Literature Sent on Request

Sold by Surgical Dealers

BECTON, DICKINSON & CO.

RUTHERFORD, N. J.

Makers of Genuine Luer Syringes, Yale Quality Needles, B-D *Thermometers, Ace Bandages, Asepto Syringes, Sphygmomanometers and Spinal Manometers*

Doctor, Give Us a Minute, Please!

You are probably buying medicinal and other products from a half dozen firms who do not advertise in YOUR State Medical Journal. If we had their names and addresses, we could probably secure their business. Their advertising would help them and help cut down the present expense of your Journal. We can print more reading matter when we carry more advertising.

Please take just a minute to fill in this blank and return it to us with the names and addresses of a half dozen such firms who are not using space in this Journal. Your name will not be used, yet you will render your Journal a real service. THANK YOU!

FIRM NAME **ADDRESS**

_____

_____

_____

_____

_____

_____

Mail this to Journal, Kansas Medical Society,
608 Kansas Ave., Topeka, Kansas

INFANT DIET **MEAD'S** MATERIALS

CO-OPERATION
In Infant Feeding

SUCCESS in Artificial Infant Feeding depends largely upon the kind of food selected, and *co-operation* with the mother.

There are many things that the doctor would like to tell the mother, and so we have devised a little book that gives the information just as the doctor would like to tell it himself. The title of this book is

"Instructions for Expectant Mothers and the Care of Infants"

The subjects covered are:

Before Baby Comes
Urinary Examinations
Physical Examinations
Clothing for Expectant Mothers
The Bowels
Sleep
The Bath
Exercise
Diet
Care of the Teeth
When Baby Comes
Baby's Clothes
After Confinement
Nursing Your Baby at the Breast
Hours to Feed
Utensils Needed for Bottle-Feeding
Care of Cow's Milk
Care of the Nipples and Bottles
Orange Juice
Cod Liver Oil
Weighing the Baby
Baby's Bath
Sleep
Sunlight
Thumb and Finger Sucking
Pacifiers
Bed Wetting
Adenoids
Earache
Colds

Throughout the booklet no instructions are given, and the mother is urged to

CONSULT THE DOCTOR FIRST

There is no advertising of Mead's Products

25 to 50 copies of this little booklet will be sent to any physician on request

MEAD JOHNSON & COMPANY
Evansville, Indiana, U. S. A.
Manufacturers of Infant Diet Materials

THE JOURNAL
of the
Kansas Medical Society

Vol. XXVI. TOPEKA, KANSAS, MARCH, 1926 No. 3

Malignant Cystic Ovarian Tumors

JNO. L. GROVE, M.D., Newton.

Read at Annual Meeting of the Kansas Medical Society, Topeka, May 6-7, 1925

CASE REPORTS

Before presenting a short review of three interesting cases of ovarian cysts of malignant character, I want to show half a dozen lantern slides giving micro-photographs of the tissue as well as the gross pathology which was similar in our three cases.

1st. The gross pathology in this case I shall recite with the history, suffice to say the tumor was multilocular, about the size of a basket ball, containing the contents characteristic of a dermoid with the nodular masses in the lining wall of both the mother and daughter cysts.*

(1) This slide shows a great variety of tissue, embryonic in character, groups of epithelial cells, cartilage and glandular tissues.

(2) Here again are the characteristic grouping of epithelial cells in disorderly growth and location, embryonic in character.

(3) Again definite areas of embryonic structure, adenomatous in character with flat epithelial cells suggestive of malignancy.

(1) Photograph of cyst with papillomatous growths scattered over inner wall. These varying in size from small glistening speck to as large as a walnut.

(3) Here is the typical grouping of embryonic type with wild arrangement of epithelial cells.

(3) Again conglomerate grouping of embryonic tissue.

(1) Gross tumor.

(2) Tumor opened showing papillomatous growths.

(3) Micro-photographs.

Case No. 1. Female, age 30, who had been married five years, and had never been pregnant. Nothing important in her past history, not excepting her menstrual history which had been regular since sixteen years of age, usually somewhat painful but in the past two years had been less painful than previously. A little greater amount of flow during the past several years but nothing alarming or no change that required any medical consultation. The last two periods prior to this examination were at three week intervals and were five day periods. Patient had had her tonsils removed seven years ago.

Her present complaint consisted of merely a feeling of weight and heaviness in the abdomen and pelvis, some little bladder disturbance although no distinct cystitis, some little difficulty in emptying the bowel, and an irritating cough. She reported having an attack of rather distinct hard pain six months previous, which however, had not been severe enough to require a physician's attention. During the past two months the abdomen had enlarged rapidly, especially in the right inguinal region. She had thought possibly she might have a hernia and reassured herself that the enlargement of the abdomen was only the result of quite strenuous physical exercises in which she had indulged, while attempting to strengthen her abdominal muscles. Her weight had possibly decreased a few pounds in the last three months.

A general physical examination showed nothing of importance except in the abdomen which was extremely full, with a distinct palpable mass extending four inches above the navel on the right side and about to the line of the navel across the abdomen on the left. This mass was very solid and irregular in outline. Bi-manuel examination showed the pelvis tightly filled with an irregular tumor mass which was not movable. The uterus seemed to be separate from the mass. The mass, however, was not fluctuating and seemed entirely too fixed for an ordinary cystic tumor. The laboratory findings showed the urine of very low specific gravity, no albumin, sugar or casts. Hemoglobin 85 per cent, leukocyte count 13,000, blood pressure 120-70 A preliminary diagnosis of cystic tumor, (first) and fibroid, (second) was made.

The operative findings were as follows: A median incision was made up to and two

* As copies of these slides were not furnished with the manuscript we are unable to reproduce them. (Editor).

inches beyond the navel. The parietal peritoneum and omentum were matted together and a dozen or more nodular masses averaging about the size of hazel nuts were seen engrafted in the peritoneal wall. These were hard fibrous non-bleeding tumors. The intestines were matted to a thick wall tumor mass and in loosening this mass on the left side a cyst was ruptured and about a pint of thick, non-odorous pus-like fluid evacuated. This was cleaned up and the main mass liberated from the intestines and delivered, the attachment being on the right side. The tumor mass filled the cul-de-sac tightly. The mass was about the size of an adult head and was cystic. Attached to the mass were small fibrous tumors, grape like in appearance, containing material such as we usually see in inflammatory conditions, but in the main hard and fibrous. These were bleeding and were attached to the uterine body and to the peritoneal wall of the cul-de-sac. A similar hard mass, the size of a grape fruit and irregular in shape, was delivered from the left side and was apparently the degenerated ovary of that side. Several small fibrous masses were removed from the uterine wall where they had seemingly engrafted themselves and as many as half a dozen of similar nature were removed from the peritoneal cavity at other points. None of these masses seemed to be glandular nor was there apparently any glandular metastatic condition in the broad ligaments. A glass drainage tube was left in place. Post operative diagnosis made was sarcoma of the ovary.

Samples of the tissue were examined microscopically in our own laboratory as well as submitted to other laboratories for miscroscopic examination. Examination of the specimen was most interesting. A large cystic mass was encased in a very thick wall and contained the typical fluid of a dermoid cyst, together with masses of caseous material, hair and other signs of a dermoid. The other large mass the size of a grape fruit was irregular in outline and was apparently an ovary. This cut with extreme difficulty, was very fibrous and contained masses of cartilaginous material as well as small cystic degenerating spots. It was from these specimens that the microscopic sections were cut. The following is the report of the consultant on the microscopic picture of this tumor.

"I have examined sections of the ovarian tumor which you sent in, and wish to report that same is a teratoma. The growth contains cartilage, bone, connective tissue, muscle, skin, rudimentary hair follicles, surface epithelium, gland tissue, nerve ganglia, etc In other words this is one of the so-called "histological potpourri" of Rindfleisch.

"The growth is not malignant in the ordinary sense, other than its disposition to continue to grow. However, I have seen one or two of this sort that apparently show regional metastasis.

"This is a 'bird' and I want to thank you for referring the case to me."

I find that this type of ovarian tumor is extremely rare. In 1917 one author reports having been able to collect only thirty-seven well authenticated cases. In one of these cases, the tumor was found incidental to a dermoid, as in this particular case. A possible explanation has been suggested as to the etiology of this type of tumor, the explanation being not alone that of misplaced cells of embryonic tissue which is the ordinary explanation of dermoids, but a result of an ectopic condition of the type of chorio-epithelioma or hydatid mole. It would seem to me that this explanation might have considerable foundation especially in a case where both the dermoid, known to be a non-malignant condition, and the other tissue of embryonic type, which is more than suspicious of malignancy, are found in the same case. This patient however, gave no history of miscarriage or symptoms of that nature. Frank, in his "Gynecological Pathology," states, concerning the prognosis of this type of tumor, that in his own series of thirty-seven cases, the outcome was not known in ten cases, and in the rest a mortality of 88.9%, several of the cases having been observed only six months. He states that the average period of life, after the operation, was from six months to a year and three months. The peculiar metastatic engrafting in the peritoneum was also mentioned in this article and the possibility of lung metastasis has also been mentioned.

This patient was dismissed from the hospital February 19, 1923. An examination March 3d showed marked general gain and no signs of any recurrence to be made out. Pelvic examination in April gave no indication of any recurrence, however, the patient was complaining of severe back ache and pain in left kidney region without any urinary findings and the possibility of metastatic condition of the kidney could not be disregarded.

On the 18th of April the recurrence of the tumor mass could be easily felt; and on bi-manual examination a thick hard mass extending well up above the symphysis. This mass was fixed and was making considerable pressure on the bowel and bladder. X-ray treatment was then advised and

the patient given several doses with the ordinary machine with apparently no effect. On the 23rd of May, three months after the first operation, on the advice of a surgical consultant, she was re-operated. The following is a report of our surgical findings, at that time:

Former wound opened, omentum matted to peritoneum and over an irregular nodular tumor mass which filled the pelvis and extended half way up to the navel. This mass was shelled and torn out and during the process many coils of small bowel were abraded where tumor was densely adherent. A very close attachment was broken through on the sigmoid and much tumor tissue remained on the bowel. No special effort was made to control hemorrhage. Several small masses were engrafted to peritoneal wall and on coils of small intestine. A few of these were removed.

Here again you will note that there were many masses engrafted to the peritoneal wall and upon the coils of the small intestine. Some of these were removed for microscopic study. They were true grafts not metastatic growths. The patient made a most uneventful recovery and was dismissed seventeen days after the operation. Recurrence very promptly began to show, and the patient on the advice of consultant was referred for deep x-ray therapy, with high voltage machine. She was given four treatments of two hours each in the period of about ten days, each application made over the sides and abdomen. She then returned home for thirty days and again returned for a dosage of about double the amount given the first treatment. During the next few weeks no effect could be noted in the reduction of the size of the tumor mass or in the general condition of the patient. The abdomen continued to enlarge with hard nodular masses until it was enormously distended. The patient died on the 26th of July from general exhaustion, about six months after first treatment was instituted.

Case No. 2. A physician's wife, age 50. No unusual family history. Change of life about six months previous to this examination. No flooding spells or anything unusual, either before or since the climacteric. For the past three months the patient had been having an unusual amount of bloating and abdominal distress. She was sure the distention in the abdomen was due to gas. The patient showed marked enlargement of the thyroid gland nad some indication of hyper-secretion of that gland. Her sister had suffered from exophthalmic goiter and had succumbed from the effects of a cancer of the thyroid. On examination the patient was found considerably off in flesh with a very prominently distended abdomen. Bi-manuel examination indicated the presence of an abdominal tumor and a diagnosis of ovarian cyst was made. She was operated on in Axtell Hospital May 23, 1918, with the following findings reported:

A cyst of the broad ligament on the right side, holding several gallons of fluid, and extending well up toward the liver. It had to be tapped with a trocar before removal. The tumor was dissected out from the layers of the broad ligament. Near the base of the right tube and attached to the ovary was found a small adventitious cyst. This cyst when opened was found to be a dermoid. It was filled with a cheesy material and contained some hair. It was removed together with the right ovary and tube. Although the abdomen was explored, no other pathology was discovered. She made an uneventful recovery and was dismissed from the hospital after three weeks. She remained in splendid health for about five years or until the latter part of 1923 when the patient began to notice that the abdomen was again enlarging and that there was some tendency to bladder irritation and disturbance of the colon. There was also a tendency to the formation of an unusual amount of gas, as had previously occurred. Bi-manuel examination showed a large tumor mass fluctuating, tightly fixed, and the diagnosis of cystic tumor was again made. On the 29th of December she was again operated and the following findings were recorded:

The abdomen was opened in the previous incision and the scar in the skin removed. There was very little hemorrhage from the skin and superficial tissue. On opening the peritoneum a large cystic tumor was seen covered with the fibers of the broad ligament and blood vessels were extremely dilated, being as large as the small finger. After some of the fibers of the broad ligamen had been clamped off and released, and the tumor raised up, it ruptured and delivered a large quantity of sero-bloody fluid. There was probably one gallon of this fluid. Clamps were placed down the side of the uterus which was very small and a larger portion of the lining of the tumor was removed. The broad ligament was carefully ligated and the balance of the tumor sac which could not be peeled out was invaginated with the serous-surface toward the peritoneal cavity, so that it could not again close. Drainage tube was

placed in this pocket. A good dressing of omentum was secured and hemorrhage was carefully taken care of. On the inside of this tumor sac was seen a number of small cauliflower like nodules, perhaps twenty-five in all, varying in size from a small pea to as large as a walnut. One or two of these fell out of the tumor sac and were recovered from the peritoneal cavity. None was seen engrafted anywhere on the peritoneal surface of the intestines or abdominal wall.

The microscopic examination made from a section of the small tumor from the cyst wall showed considerable number of cells of embryonic type, together with both large and small round cells and indicating definitely their malignant character.

On March 11th, three and one-half months after her operation, I was called to Topeka to see this patient in consultation with one of our hosts. She was suffering from acute intestinal obstruction and examination revealed a mass the size of a grape fruit, rough and irregular in character, which together with the adhesions was producing the acute obstruction. The abdomen was at once opened under local anesthetic and a dense mass of adhesions was found with a tumor mass rough and irregular in shape, the size of a grape fruit. The adhesions to the loops of the small intestine were so extensive that very little could be done in the way of relieving the condition, and the possibility of removing the tumor could not be considered. A loop of small intestine which was much distended was brought to the surface of the wound and fastened to the peritoneum, so that later it could be opened for the relief of the obstruction. Her death occurred one week later from exhaustion.

The hopelessness of a case of this type is apparent to all of you. In this particular case the interesting feature was the grafting and growth of transplanted tissue. The tissue which, though not primarily malignant, was embroyonic in character and capable of carrying on all the destructive characteristics of a typical malignancy with one exception, that of glandular involvement.

In the March issue of Surgery, Gynecology and Obstetrics is a splendid article on the subject of "Transplantations and Endometrial Tissue," and their relation to ovarian tumors. This case in particular illustrates to me that transplanation of this type of tissue probably very frequently takes place. The ovary seems to be the favorite seat of the graft transplant and very probably the irritation of the transplant has much to do with the cyst formation.

Case No. 3. Female, 27 years old. Patient called her family physician at 7:00 a. m. on March 7th, this year. Her complaint was severe general abdominal pain. She reported vomiting once or twice, bowels had moved with enema but with no relief from the pain. There was no bladder disturbance and she gave no history of any previous attack of similar nature. She had one child 19 months of age. Menstruation did not appear in February or March and patient thought she was pregnant.

Physical Findings: Face flushed, lips red, no evidence of shock. Rapid pulse full and bounding of toxic character. Lungs filled with moist rales the effect of recent flu and cold. Abdomen had a peculiar fullness, standing up from symphysis like a six months pregnancy. Patient stated that abdomen had always been prominent. Bimanuel examination disclosed a uterus enlarged to size of two to three months pregnancy, cervix soft, no discharge from cervix. A large indefinite mass extended above the uterus and up considerably above the navel slightly to the right. This mass was quite fixed and over the right lower quadrant the patient was extremely tender but with no rigidity.

Laboratory Findings: Urine 1020, one plus of albumin, otherwise negative. Leukocytes 10,000. Pre-operative vomiting, coffee colored. Positive guaiac test for blood. Preliminary diagnosis, (first) appendicitis, (second) extra-uterine pregnancy, (third) strangulated cyst.

Operative Record: A right rectus incision was made splitting the muscle to approach a median exposure. On opening the peritoneum a large smooth cyst was discovered growing from the right side. After enlarging the incision it was delivered without rupture. The pedicle was twisted and strangulated, almost necrotic. It was ligated and the tumor removed with no soiling of the peritoneum. The appendix was inflamed and adherent to the broad ligament. It was removed. The left tube and ovary were normal and not disturbed. Uterus smooth, enlarged, pregnant.

Gross Appearance of Specimen: A thick walled ovarian cyst as large as a basket ball with smooth peritoneal cover. Fluid straw colored, slightly cloudy and thick. Inside lining of cyst was studded with nodules varying in size from a minute speck to a walnut sized rough nodule. Microscopically these were made up of embryonic structures, comprising tissue from all layers.

The patient's recovery was not the usual

uneventful one as is usually reported. She continued her pre-operative vomiting of brown bloody character till we were sure she had an ileus, but the stomach tube brought her through. Her cough and post-flu effects continued troublesome and during an extreme spell of coughing on the 14th day after the operation, she blew out about two inches of her incision between the silk worm gut stay sutures and proceeded to put a few feet of small bowel into her dressings, but in spite of all this, she retained her pregnancy which continued its normal enlargement. A report from her recently, six weeks after her original surgical experience, advises us that she is comfortable and gaining in strength.

Has she been saved from the fate of our two other cases by the fortunate strangulation of the tumor before any transplants appeared on its peritoneal surface and by its removal unruptured, or will one, two or five years see her another victim of malignant cyst?

SUMMARY

1. Let us be alive to the unfavorable prognosis which we must give cystic tumors of the ovary which show teratoid or embryonic transplants not distinctly malignant, but most prone to recur by implants.

2. That early and thorough removal without rupture of the cyst wherever possible, offers the best hope for cure.

3. That radium and x-ray seem to offer no assistance whatsoever in destroying embryonic tissue.

———R———

The Radiographic Diagnosis of Early Pulmonary Tuberculosis

ROLAND G. BREUER, A.B., M.D.

Assistant Medical Director, Kansas State Sanatorium for Tuberculosis, Norton, Kansas.

Read before the American College of Radiology and Physiotherapy, Chicago, October 20, 1925

Humanity has been fighting the disease of pulmonary tuberculosis for ages; Civilization has been collecting facts and statistics concerning it for twenty-eight centuries; and still it is new. Like all of the other of our heritages from antiquity, it has wrapped about itself a venerable mantle of tradition and precedent, much of which, in our medical training, we accept as a matter of fact without further inquiry into it. Although the x-rays, as an aid in the diagnosis of this disease, are only of the present generation, the man employing them—the radiologist or physician—has been trained in the same school as the rest of us, and has absorbed, directly or indirectly, many of these traditions.

Today, the diagnosis, as well as the treatment of pulmonary tuberculosis is breaking away from the regime of our fathers and is entering upon a new era. Due to radically changed concepts of the pathologic physiology of the disease, it is once more new, and must be learned anew. Under the old regime—before the x-ray was a part of Medicine—the diagnosis of pulmonary tuberculosis was not made until, in a majority of cases it was, according to the new standards, advanced, and therefore, as such, unable to be cured or eradicated as completely as it can be today. Now, however, it is possible to make a diagnosis of this disease before the physical findings of auscultation and percussion become evi-

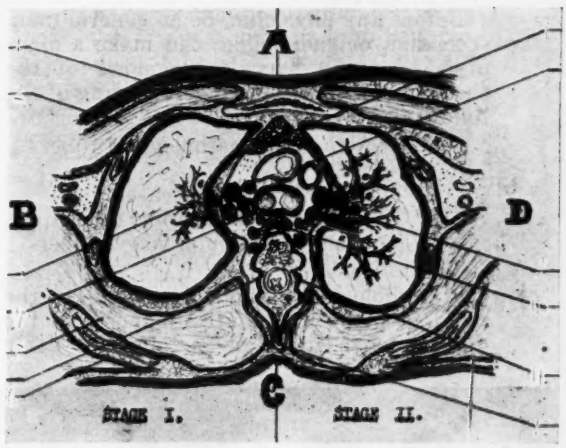


FIG. 1—Cross section of thorax at beginning of aortic arch.

STAGE I—Stage 1 shows enlarged mediastinal glands and only slight fibrosis encroaching onto lung from hilum (an incipient case). Auscultatory and percussion sounds at positions, A and B, are completely absorbed by intervening soft tissues. Only at position C, where there is a continuous bony path of conduction, can these first, faint sounds reach the surface (D'Espien's Sign).

Even a radiograph or fluoroscopic examination shows very little—only a fine spray in the hilum and clouding in the mediastinum, since in an early case the mediastinal glands are not very dense and have very little calcification.

STAGE II—Stage 2 shows the fibrosis extended into the lung tissue sufficiently heavily and far so that the intervening soft tissues fail to absorb the adventitious sounds, which are heard by the examiner as "auscultatory" or "percussion" sounds.

The x-ray examination will show more clouding of the mediastinum and heavy spraying BOTH INTO APEX AND BASE, also fine or heavy beading, depending upon the acuteness of the process.

This stage is no longer a case of incipient tuberculosis.

KEY—1. Sternum; 2. Muscle; 3. Thickening of hilum; 4. Bifurcation of trachea; 5. Muscle; 6. Scapula; 7. Thymus gland; 8. Aortic arch; 9. Enlargel lymph gland; 10. Esophagus; 11. Vertebra; 12. Vertebral spine.

dent; before the radiograph shows definite lesions in the lungs; and the tubercle bacilli need never become present in the sputum.

This paper does not imply any criticism of the medical examiner or the radiologist. Its purpose is to present to them a procedure whereby a diagnosis of pulmonary tuberculosis may be made before the pathology becomes so widespread as to make recovery difficult or impossible, and to enable the radiologist not only to aid the examining prysician in making an early diagnosis, but also to help convince the patient that there is an actual disease present, and therefore calls for early, intelligent, intensive treatment.

Before any physician, be he general man, specialist, or radiologist, can make a diagnosis of really early tuberculosis of the chest, he must have an understanding of the following:

1. Growth of the pathology of tuberculosis.
2. The course of the disease.
3. The signs and symptoms of incipient or early pulmonary tuberculosis.

The radiologist cannot depend upon the plate to make a definite diagnosis of the disease when it is an incipient or early stage, any more than can the examining physican expect to make it from the physical findings of auscultation and percussion, or the dermatologist recognize scarlet fever or smallpox before the lesions become definitely visible. All the x-ray plate shows or the physicial findings indicate in a case of suspected pulmonary tuberculosis is whether or not there *is definite, recognizable pathology in the lung.* However, in a case of incipient or really-early pulmonary tuberculosis, neither the x-ray nor the physical findings will show definite lesions in the lungs, *because they are not there*—they are in the mediastinum first, and later in the hilum. Only after *years of activity* in an ordinary case, do the lesions get out into the lungs themselves. Stating it inversely: when the radiograph and physical findings show definite tuberculous pathology in the lung tissue, the case is no longer incipient, but is moderately advanced, or even sometimes advanced. This will be made clear by the newer conceptions of the following:

1. Mode of Infection.
2. Primary seat of infection.
3. Time of infection.
4. Spread of the pathology.
5. The role of physical findings.

MODE OF INFECTION

Several different sets of investigations have proven rather conclusively that infection with the human type of tubercle bacillus will cause pulmonary lesions in man; the bovine type causes bone and joint tuberculosis.[1] Of the three modes of infection: ingestion, inhalation, and inoculation, it is believed that two, or perhaps all three combine in the causation of the disease.[2] On

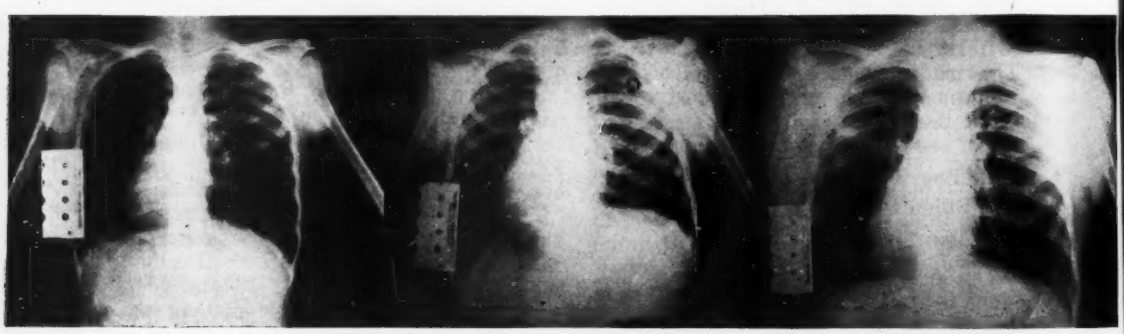


FIG. II—Age 11, female, twin. Beginning fibrosis in right and left hilar regions (left hilum partially obscured by heart shadow). Few light trabeculations extending upward into right apex, and MORE HEAVILY DOWNWARD INTO RIGHT BASE. Afternoon temperature, high pulse, asthenia, etc.

FIG. III—Age 11, male, twin. Has been more active physically than his sister, disease a little further advanced. Correspondingly, the hilar shadows and sprays into apex and base are more pronounced, as is the toxic heart. Afternoon temperature, high pulse, etc Note the similarity of pattern of the sprays of fibrous tissue on both sides (in all the cases).

FIG. IV—Age 14, male. Disease more advanced. Increase in area and dinsity of the hilar and apical shadows. Right apex beginning to become clouded with fibrosis. Marked toxic symptoms, afternoon temperature, high pulse, rales in both hilar regions and right apex. Physical findings are evident, percussion and auscultation. Toxic heart. This case is not INCIPIENT TUBERCULOSIS but IS INCIPIENT PULMONARY TUBERCULOSIS.

several thousand cases examined in the last five years, careful elicitation of the family history, not only of the parents and grandparents, but also of the collateral branches even to the third and fourth generation, with a large series of radiographs on whole families through several generations, have led the writer and his associates to the firm conviction that, almost without exception, infection of tuberculosis comes in early childhood, in the vast majority of cases by the second year, and almost always before the seventh or eighth year of life. Also, that 98 per cent had been infected by one or the other of the parents—most often by the mother, even though, as was very often the case in these series, the disease was not diagnosed on the parents, and the greater number of them were living, even having overcome their infection [2].

PRIMARY SEAT OF INFECTION

At the present time it is universally conceded that, come from where it may, the primary lodgement of the tuberculous infection is in the lymph glands of the mediastinum. These glands are the first line of defense of the body. If the infection be not too massive, or the body-resistance not too much lowered by a profound drain upon the whole system such as general infective disease, overwork, overexposure, or starvation (actual in poverty or relative in disease), this first line of defense may prove adequate and the infective process be halted, arrested, encapsulated, and calcified. This process will, however, be a *matter of years,* and the patient will exhibit characteristic toxic and reflex symptoms during all this time [3]. While this pathology is confined to the mmediastinum, it does not become evident on routine physical or radiographic examination for tuberculosis in the chest. Here arises the first quandary in the course of the disease: the examiner finds symptoms definitely indicative of active pulmonary tuberculosis; he finds few or no definite physical findings. Therefore, he refers the case to the radiologist, who in turn finds no definite pathology in the lungs on radiographic examination, and so reports. Being unable to explain this seeming anomaly, the examiner hesitates to stand on his judgment and looks for something else. As a result, he is mislead by the many reflex symptoms which pulmonary tuberculosis causes, and it often takes the round of tonsillectomy, appendectomy, oophorectomy, cholecystectomy, and often an operation or two for adhesions thrown in for good measure before the tuberculous pathology becomes massive enough so that it can climb to the surface sufficiently to make itself seen or heard. Such a history is by no means an exception in the experience of the tuberculosis specialist, especially in the case of the tall, spare, dark-brunnette type of patient—the so-called "neurotic" or "gastric ulcer" type.

TIME OF INFECTION

The men engaged in chest work are unanimously swinging around to the opinion that in from 90 to 95 per cent of all cases of active tuberculosis, be they eight or eighty years of age before they are recognized, the infection by tuberculosis takes place in infancy or early childhood. For the past few years the grade school has been haunted by the underweight-child problem. Here again, for a while, the tonsillectomist reigned supreme; only recently, in small, isolated areas, men who understand tuberculosis in the child are demonstrating beyond all doubt that most of these underweight children are *tuberculous*—not with *pulmonary,* but with *mediastinal* pathology. A study of the method of handling these children will demonstrate that the procedure employed for building them up is nothing more than the treatment of early tuberculosis. In passing, it is well to repeat that, even when these children are found, the disease has been preceded by an active infection of some years standing.

SPREAD OF THE PATHOLOGY

The tubercle bacillus and its depredations act as a foreign body in the tissues and cause a mild irritation. The body defenses attempt to wall it off by encapsulating it with fibrous tissue and impregnating it with lime deposit. If successful, arrestment takes place, anl if kept in subjugation and starved for a period of from five to eight years without spread or reactivation, cure may be said to have taken place, although the danger from breakdown may last for two or three decades. For, even a firmly calcified nodule may contain virulent organisms for years, which can again become active [4].

If, however, the defenses prove inadequate, the primarily infected glands of the mediastinum are filled—the first line of defense crumbled—and the infection overflows into the adjacent glands. The healing process—fibrosis and calcification—doggedly follows in the wake of the invaders in the form of radially and peripherally branching sprays of scar tissue. Even at this time neither the radiograph or physical

findings show the process. The spread of the infection and the protective fibrosis spreads outward, following the bronchial arborizations along a route which is directly the reverse of the lymphatic flow in the lung. Gradually this extension carries the battle into the hilum of the lung, and only then does the process begin to become evident in the radiograph—perhaps years after the infection first gained foothold—for the Koch bacillus is a good-natured organism of low virulence, which goes about its task of destruction in a leisurely, but very thorough, manner.

When the pathology first reaches the hilum of the lung, the radiographic evidences of it are slight—a mere aurora of the coming conflagration. The first thing noted is a mere fuzzing of the hilar shadow, later a slight increase in this region, with an increase in the definition of the lung trabeculations. As the disease progresses farther out into the lung parenchyma, these trabeculations become more definite and extend outward, radially and peripherally, into it. No definite lesions are yet present. With continued spread, these trabeculations begin to show a fine, hazy beading along their course. These beads are minute—from mere pin-point size to 3 mm. in diameter—and are at first very hazy and indefinite. Gradually they increase in size and density. If the disease spreads rapidly, definite caseous lesions appear, which are easily recognized. If, however, as is the rule, they grow but slowly, the body defenses leave them in their wake as calcified nodules, giving us the so-called "flu-spots." The writer wonders what these calcified nodules were called before the "flu" was made the subterfuge. He has watched these in several cases develop and calcify, having kept them under observtion over a period of eight years. Not a single spot became firm and dense on the radiograph in less than three years; the average time of calcification being found to be five to eight years. But all this time the patients have evinced toxic and reflex symptoms of an intermittently active pulmonary tuberculosis.

PHYSICAL FINDINGS

The greatest drawback to the progress in the diagnosis of early pulmonary tuberculosis by radiography has been the blind dependence placed by the examiner upon the physical findings of ausculation and percussion. The radiologist has not been allowed to pronounce a case tuberculous until these findings were definite. Therefore, the first evidences in density of the right apex and mere increase in definition of the trabeculations of the lung have not been given their true significance. Only after the examiner was able to hear the pathology would he allow the radiologist to pronounce a lesion definitely tuberculosis.

In the examination of a chest, the findings of percussion and auscultation are based upon the difference of the transmission of sound by the healthy and pathological tissues. Percussion depends upon the difference of resonance of the tissues; auscultation upon the difference in the transmission of sound by the tissue in question—also upon the audibility of moisture. The fact is often lost sight of, however, that these adventitious sounds become evident to the examiner *only when they are transmitted through the chest wall.*

The character of *all the tissues* intervening between the pathological process and the skin will directly affect the intensity of these transmitted sounds—the rarity, as well as the density, of the sound-transmitting medium which intervenes between the source of the sound and the skin affects the volume of the sound. A spongy, air-filled medium, such as normal lung tissue, not only fails to transmit the sounds, but in reality absorbs them. Thus, the lesions of incipient tuberculosis, which occur in the mediastinum, and those of early tuberculosis, which have spread as far as the hilum of the lung, are surrounded on three sides by sound-absorbing tissues: anteriorly by the thymus (children), sternum, muscle, subcutaneous fat, breast tissue and skin; and laterally by a great pillow of spongy lung tissue in addition to the above. Only posteriorly, where the vertebra forms a continuous bony path for sound conduction, will the first faint adventitious sounds of tuberculosis in the mediastinum be heard as D'Espine's Sign, which is such an important, and usually the only physical finding in a case of incipient tuberculosis.

The patient not only has symptoms of the toxic and reflex type at this time; the radiograph shows the pathology beginning to spread into the lung tissue from the hilum. But only after the pathology has become so massive and widespread that it has decreased the amount of intervening tissue between it and the surface of the chest wall, and when it is able to throw its vibrations through this wall, does it produce positive findings on percussion and auscultation, years after it first appears in the hilum.

It is the usual practice to look for the primary evidences to first appear in the

apex, usually the right. They do not appear first in this location in the radiograph, although, as a rule, this is where percussion and auscultation first become evident. This latter fact has caused the widespread opinion that tuberculosis begins in the apex of the lung. It does not; the anatomy of the lung is responsible for the appearance of physical findings in the apex first, because in this locality lies the shortest path for sound to travel from the pathology to the skin, and it is here least interfered with by sound obstructing tissue. Repeated x-rays over several years have proved conclusively that the downward growth of pathology into the base of the lung is concomitant with that into the apex, *and that this downward growth is the more massive.* Since, however, this downward process is more heavily wrapped in sound-deadening lung tissue, it is heard later in the game, and until it is heard, it is called something else on the radiograph, usually "normal blood vessel shadows," or "chronic bronchitis."

Can, then, the radiologist make a diagnosis of incipient or early pulmonary tuberculosis with assurance from these meagre, indefinite barkings and beadings on the plate? He can, but he must correlate the shadows on the plate with a few facts gleaned from the patient himself—the personal, family, and clinical history, which will give him a background for his diagnosis In order of diagnostic importance, the means of examination fall into the following order:

1. Clinical and Family History.
2. Radiographic Plate.
3. Physical Findings.
4. Laboratory Findings.

HISTORY

When the radiograph of a patient's chest shows an increased hilar shadow, radially and peripherally branching trabeculations, and beading, suspicion should at once be aroused. If the patient manifest the toxic and reflex symptoms of tuberculosis, such a diagnosis is in order, even though physical findings are not in evidence. An inquiry into the family and clinical history will prove the suspicion in practically every case.

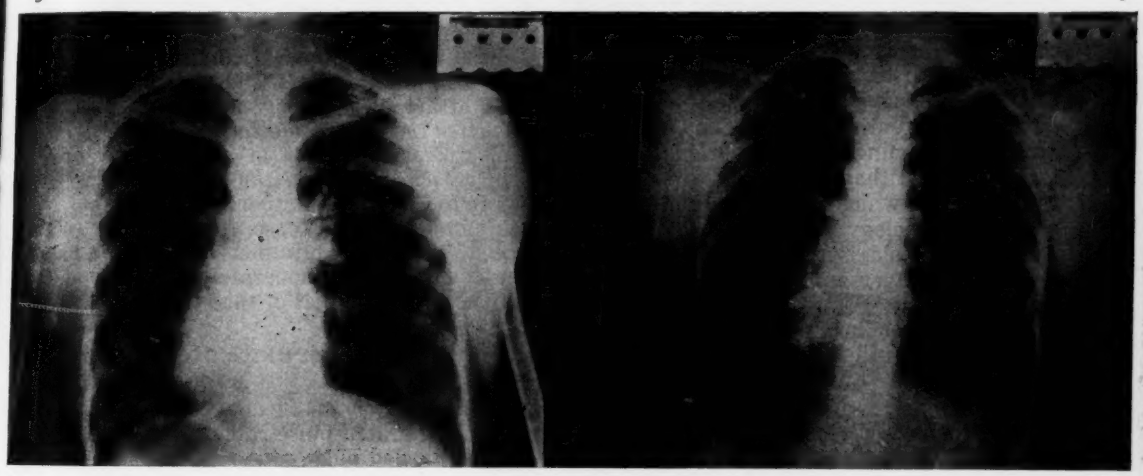


FIG. V—Age 17, female, schoolgirl. Hilar shadows are broader, more pronounced, and the trabeculations are spreading farther out into the lung-parenchyma, especially in the right apex, where the fibrosis has begun to assume a fuzzy, "cottony" effect. The physical findings are more pronounced—tactile and vocal fremitus, prolonged expiration, and rales. Hanging heart evident.

FIG. VI—Age 19, female, university student, worked part of way through two years of school. Arborizations from hilar regions extend still farther into lung parenchyma, especially in the right lung. Physical signs are more definite and pronouced. The right apex shows may small areas of consolidation—"beading". Physical findings are definitely more pronounced than in preceding cases.

In the diagnosis of no other disease is the family history of more importance than in tuberculosis. The writer does not wish to infer from this that tuberculosis is hereditary; the contrary has been proven. In the examination of several thousand cases, the family history was very carefully gone into. In extremely few cases, if any, was there not definite indication of either a parent, grandparent, brother or sister (or several of these) having had at some time or other a symptom-complex which could be mistaken for anything else than tuberculosis. Often the disease could be traced back through four or five generations. Many

times there had been no definite diagnosis of tuberculosis made, but the symptoms were typical. In no case where one or other of the parents had had a definite diagnosis of the disease made, did the children ecsape the infection or the disease. Many of them had not developed activity, others had overcome activity at the time of examination, but evidences of either latent, active, or past infection were in all of them, and were not lacking in the radiographs.

SYMPTOMS

In the older scheme of diagnosis, a person did not have tuberculosis until the bacilli were found in the sputum; and he was not admitted to the tuberculosis ward until they did appear. At present over 30 to 35 per cent of all cases admitted, and 75 per cent of those bearing the diagnosis of "early tuberculosis" never show a positive sputum during their entire stay. Many of them have been examined by an experienced raliologist and told that their lungs are clear of tuberculosis—which they undoubtedly were since the pathology had not spread that far. Had the radiologist in these cases, however, been conversant with the newer concepts of the disease, it would have been an easy matter to have correlated fact with radiograph and thereby saved the physician much misunderstanding and grief by a correct diagnosis.

The pathology resulting from infection by the Koch bacillus, whether it be called by its true name or not, gives rise to a certain, definite chain of symptoms which a trained observer cannot fail to apprehend. Taken separately they mean nothing, but, fitted together, they interdigitate into a symptom-complex which no other disease can simulate. These symptoms fall into three classes:

1. Toxic Symptoms.
2. Reflex Symptoms.
3. Local Symptoms.

TOXIC SYMPTOMS

These occur as the result of the toxin circulating in the blood. A fact not generally understood or appreciated is that, *in the beginning, pulmonary tuberculosis is a general systemic infection without demonstrable pathology, and gives symptons and findings as such.* While it is true that the bacilli themselves do not circulate through the system, *their toxin does,* and thereby causes a generalized toxemia. Just as scarlet fever, typhoid fever, syphilis (after the chancre), etc., have a stage of toxemia without demonstrable lesions, so does pulmonary tuberculosis.

REFLEX SYMPTOMS

The reflex symptoms of pulmonary tuberculosis are the result of the irritation of the autonomic nervous system by the toxin and the pathological process in the chest. They are similar to the rigid muscle over an inflamed appendix, the referred paid of gall-bladder disease, or that of a pathological hip joint. As a rule, the reflex symptoms become evident later than the toxic symptoms.

LOCAL SYMPTOMS AND FINDINGS

These are the "physical findings" of the usual, routine diagnosis. The occur as the result of actual pathology in the lung, *and only after these pathological processes have become massive enough to give evidence of their presence through the chest wall,* are they found by the examiner, which does not occur, in an ordinary case, for from five to fifteen years of continuous activity, and should be classed as moderately advanced or even advanced. A list of the symptoms follows:

TOXIC SYMPTOMS

1. White sclera.
2. Rachitic symptoms.
3. Accelerated pulse rate.
   Retarded pulse rate.
4. Early fatigue.
5. Malaise (afternoon).
6. Nervousness.
7. Morning malaise.
8. Cold, clammy hands.
9. Evening stimulation.
10. Hyperpiesia.
11. Emotional irritability.
12. Slight afternoon temperature.
13. Mental toxemia.
14. Muscle irritability.
15. Accelerated respiration.
16. Lowered hemoglobin per cent.
17. Acidity of urine.
18. Clubbed fingers.
19. Urochromogen test.
20. Psychotic acts.

The above occur in about the sequence given. Their incidence may cover a period of from 5 to 40 years. They are caused by the *toxin* circulating in the blood. With exception of a few of the latter, they precede the local signs and findings by a long period.

REFLEX SYMPTOMS

1. Irritation of throat.
2. Hoarseness.
3. Cough (light, hacking).
4. Muscle tension and hypertrophy.
5. Restricted motion or lagging.
6. Muscle relaxation and atrophy.
7. Anisocoria.
8. Pleuritic pain.
9. Shoulder pain (periph, neur.).
10. Pain over hilum.
11. Hyperesthesia.
12. Vasomotor irritability.
13. Hyperacidity (vagus stimulation).

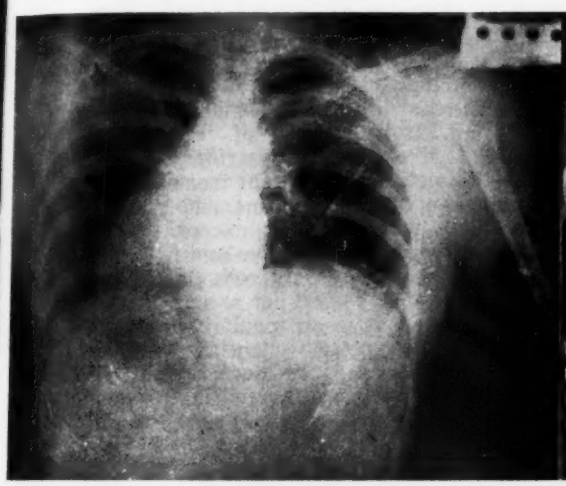


FIG. VII—Age 23, female, married, one child 2 years old. While the patient is overweight, she cannot stand exertion, is sallow, nervous, and has coughed for years. Physical findings are definite, but ARE MUFFLED BY HEAVY LAYERS OF SUBCUTANEOUS FAT. Note the fabrosis of both hilar regions—indicating good healing power. Rales in right apex. Both percussion and auscultation findings are definite but muffled by layer of fat between their origin and the examiner's ear.

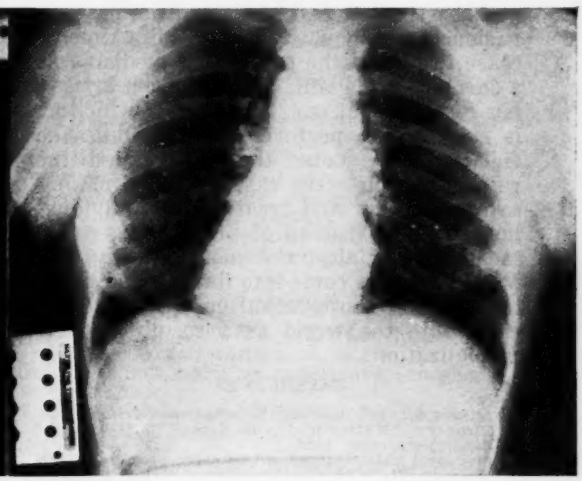


FIG. VIII—Age 43, female, mother of the preceding cases. Good fibrosis, which has contracted into firm scar-tissue, but has again begun to break down, in the right apex, which shows diffusion and beading. Physical findings (percussion and auscultation) are very marked, although the symptoms of toxicity are not nearly so marked as in the three younger children, whose physical findings, on the other hand, are conspicuous by their almost total absence.

14. Hypoacidity (sympathetic stimulation).
15. Muscular twitching.
16. Impairment of appetite.
17. Appendiceal or gall bladder pain.
18. Flat chest.
19. Hilus dimple.
20. Apparent kyphosis.
21. Irritation of nasal and pharyngeal mucosa.
22. Dyspnoea or asthma.

These are the reflex result of the *direct irritation* of the autonomic or vegetative nervous system. They precede local signs and findings.

LOCAL SIGNS AND SYMPTOMS

1. Prolonged expiration.
2. Increased breath sounds.
3. D'Espine's sign.
4. Increased whisper and voice.
5. Increased tactile fremitus.
6. Diminished Kronig's isthmus.
7. Slurred vowel sounds.
8. Cog-wheel respiration.
9. Sputum.
10. Enlarged venules in skin of chest,.
11. Rales and mucous click.
12. Pleural rub.
13. Hemoptysis and hemorrhage.
14. Impaired resonance.
15. Signs over cavities.
16. Prominent clavicle.
17. Horizontal clavicle.
18. Concave shoulder crest.
19. Winged scapula.

These, with exception of 9, 10, 13, 16, 17, 18, 19, are due to transmission of sound by actual pathology in lung tissue. When any of the above are heard, the case is no longer early.

What does the foregoing discussion lead to? Simply this: when a case of suspected tuberculosis of the lungs is referred to the radiologist, he should not merely expose the plate, develop it, read it, take the patient's money, bid him adieu, and mail an abstract report to the referring physician. He should attempt to obtain a background for his radiologic diagnosis by an examination

of the whole patient by eliciting the history, symptoms, and by giving the chest a cursory examination.

To obtain the history, signs, and symptoms need consume very little time—only fifty or so questions need be asked. A short examination of the chest would take three minutes. The referring physician would appreciate this effort.

The idea of a radiologist's inquiry into the history and symptomatology, and that he examine the chest of a case may be somewhat contrary to the usual conception of his role—that of merely taking a portrait of a chest and reading it, but the patient will appreciate this interest in him. And, past experience has shown that it is high time to cease to regard the practise of medicine as a sort of Ford Plant, in which each artisan has one, and but one, thing to do, which he is supposed to perform with machine-like fidelity. The sooner the Men of Medicine realize that in every case they are making a diagnosis on and treating an individual human being instead of practising a fragmentary specialty, the more quickly will Medicine again come into its own and begin to eliminate those jackal cults which have crept into the world as a result of overspecialization.

REFERENCES

1. Fishberg: "Pulmonary Tuberculosis.
2. Breuer: "Mediastinal and Lung Tb." Jour. of Radiology, Aug. 1925.
3. Breuer: "Limitations of Physiotherapy in Pulmonary Tb.": Practical Medicine Series, Medicine 1925.
4. Fishberg: "Pulmonary Tuberculosis."

Note—Figures 2, 3, 4, 5, 6, 7, 8, are members of the same family, which have been under observation for two years. Figures 2, 3, 4, 8, were patients at the institution for several months. The family has definite history of tuberculosis, even among uncles and grand parents.

———R———

The Evolution of Science

SARA G. STEPHENSON, M.D., Topeka

H. G. Wells says there have been ten great discoveries since the dawn of civilization. He says a discovery is not an invention. It is greater than an invention, as the sea is greater than the ship it bears. Discovery is the making plain, the laying bare of a new and hitherto unrealized system of possibilities. This is rarely, if ever, the work of a single mind. In Sir Richard Gregory's delightful and inspiring book called "Discovery" one learns how the work and insight of this man served the work and insight of that man until at last a new light dawned upon the world. Dr. F. G. Banting, the discoverer of insulin, the new remedy for diabetes, writing in Hygeia, says: "What we are is in part only of our own making. The greater part of ourselves has come down to us from the past. What we know and what we think is not a fountain gushing forth from the barren rock of the unknown at the stroke of the rod of our intellect; it is a stream which flows by us and through us, fed by the far-off rivulets of long ago. And what we think and do today will mingle with and shape the thoughts of nations yet unborn."

Scientists have been called "Pioneers on the World's Last Frontier." Sinclair Lewis, in his recent novel "Arrowsmith," has given us a most vivid description of a scientist. He puts these words into the mouth of the eccentric old scientist, Dr. Gottlieb: "To be a scientist—it is not just another job, so that a man should choose between being a scientist, a bond salesman, a farmer, or a king. It is a tangle of very obscure emotions—like wanting to write poetry. It makes its victim all different from the good normal man. The normal man, he does not care much what he does except that he should eat and sleep and live and love. But the scientist is intensely religious. He is so religious that he will not accept quarter-truths because it is an insult to his faith. He hates the pseudo-scientists and the guess-scientists and the doctors who run about trying to cure people with new scientific discoveries before they are thoroughly understood."

Science is a jealous mistress. She points to worldly position, friends, home and family ties, and says: "Lovest thou me more than these?" The true scientist lives in a world apart. The joys of social intercourse are not for him, for no abstract thinking was ever done in a crowd. I do not wish to give the impression that these people are martyrs, for such is by no means the case. They have chosen to do this work because of the joy it brings. They have the keenest joy—the joy of discovery. Like the poet and the artist, they are impractical people; money means so little to them. They are seekers after truth and count no cost too great to pay.

Witness Dr. Carroll, who in his enthusiasm to prove that yellow fever was carried by a mosquito and by one species alone, allowed himself to be bitten by an infected insect. Carroll lost his life in this experiment but for twenty-five years the territory previously infected has been free from yellow fever.

Dr. Henry Beatjer of Johns Hopkins Hospital has only two of his ten fingers left. He lost the other eight as a result of burns received in x-ray experiments. "I suppose

my research work will eventually kill me," he said, "but I'll die with my boots on."

Radium research caused the death of Prof. Bergonie last winter. The following is copied from The Topeka Daily Capital, under the date of Jan. 3d, 1925: "Paris, Jan. 3d.—The chemist who worked with Prof. Curie and Madam Curie, died today in a hospital, the victim of a strange and agonizing affection caused by continued experimentation with radium. His case is not unlike that of Dr. Vaillant, the noted x-ray expert. In Bordeaux, an autopsy was performed upon the body of Prof. Bergonie by his pupils and a group of specialists, in accordance with the wishes of this martyr to science. Prof. Bergonie had forbidden the holding of any funeral services or ceremonies, asking only that his body be used for the study of the affection that is killing or maiming so many in this branch of science."

Madame Marie Curie, our one great woman scientist, lives in an unpretentious part of Paris, surrounded by her books, crucibles, and retorts. When Madame Curie visited America a few years ago, she was a pathetic figure, prematurely old, lacking in social graces, a little old lady whose clothes were at least ten years out of date. When America asked Madame Curie what could be done to show our love and honor, she asked for a gram of radium. This cost $100,000 and was far above her financial ability, but the women of America, we are happy to know, gave Madame Curie her radium.

The work of Dr. George W. Carver, a negro professor in Tuskegee Institute and the son of an ex-slave, was recently reviewed in The Literary Digest. This man has produced many useful products from the sweet potato. These include rubber, candy, dye, paste, paint, starch, vinegar, ink, and molasses. He has developed many things from the peanut. This is all very wonderful, but what comes next is greater than all. It is known that Dr. Carver is poorly paid, but he refused a princely salary from Thomas A. Edison, who wished to have this scientist on his staff. But he preferred to remain with his school and help solve the colored people's problems. "I have never received any money for my discoveries," he said. "Some one was benefitted by one of my discoveries and sent me a hundred dollars, but I sent it back to him."

They are always trying to find the North Pole. One failure follows another, but still they go on. Now the finding of the North Pole may never serve a useful purpose, but it will satisfy that longing in some heart to know the truth. Burton Braley puts it this way:

"With a miscroscope and a butterfly net and a specimen case they go,
Into the heart of an African swamp or a jungle in Borneo.
Or with shovel and pick, where the sand lies thick,
Over cities a long time dead,
They dig down deep where the dead kings sleep,
To learn of the lives they led,
They climb the crest of Everest, they freeze in the Arctic night,
To weigh the air on a mountain peak or to see that a map reads right.

"Spectacled profs from colleges, fusty and bookish-brained,
Probing wherever knowledge is likely to be obtained,
Sifting the old mythologies, testing the dreams of youth,
Experts in all the ologies, trudging the trail of Truth.
Their bones are strewn mid caverns hewn by the paleolithic man,
They have died on the trail of the rumored vale where the Aryan race began,
Fever and drouth in the blistering South, and storms of the cruel North,
Have taken their toll ere they reached their goal,
But their brethren still go forth

"Little of fame they get for it, and poor they live and die,
Knowledge they seek and sweat for it, that the world may gain thereby.
The world that learns so tardily and grudgingly too, in sooth,
While ever these pedants hardily fare, forth on the trail of Truth."

These are but illustrations of what has been going on in the world in a greater or less degree since man first began to look about and began to fashion rude implements of stone and iron. Nature's gifts are mostly hidden, and she demands a price of all that would know her secrets. That price is—hard work. Nothing new has ever come to us without someone's paying this price. Often it is after repeated failure, and many work only that someone else may later find the key. There is a synthetic drug known as salvarsan, which has also been called 606. It was called by this number because the chemist who discovered the formula had failed six hundred and five times.

They tell us that the past century has seen more inventions and scientific progress than took place in all the preceding centuries. Things are coming fast now but not easily, please remember that.

During the past few years, much news of scientific discoveries has appeared in the newspapers and magazines. Most of this has been useful information, but some of it has been hodge-podge of misinformation.

The writings of such men as Woods Hutchinson, Royal Copeland, and Dr. Evans of Chicago, have done much toward increasing the general knowledge of the public upon medical matters. Dr. Edwin Slosson of Washington, D. C., is doing a wonderful work in bringing a working knowledge of the purely academic sciences to the people. His writings are now being translated and published in leading periodicals in Europe. He is not a physician, but his writings on science as applied to medicine, as well as all other things that he publishes, are the best to be had. Kansas should be very proud of this little man. He spent his boyhood in the town of Sabetha, Kansas.

Unfortunately, we are getting some bady scrambled reports on discoveries and near-discoveries, which never should have appeared in the lay press at all, but should have been reported in technical magazines. The readers of these magazines are in a position to judge the subjects more nearly on their merits. Just a short time ago, the newspapers, big and little, throughout this broad land, heralded the great tidings that at last some scientists in Europe had discovered the germ of cancer. There is only one thing wrong with this news, and that is that it is not true, or at least many of our best thinkers on this subject do not think that it is true. There are some that hold to the microbic theory of cancer, but the whole subject is one that even the best research workers know little about, notwithstanding the enormous amounts of money that have been given by Mr. Rockefeller and others for this work. Anything these people may have found or have thought they had found is still in the controversial stage and should have been confined to scientific circles until time can settle the question. Dr. Ludwig M. Wolf, the German cancer specialist, says: "They aim at finding the cancer germ; that is to say, they aim at finding something that does not exist. There is no such thing as a cancer germ. How do I know?" Then he goes on to describe the nature of cancer. This disease never occurs in the young, but only after middle life, when in some mysterious way the equilibrium of the body is disturbed and the epithelial cells which cover our body and line all our glands become outlaws and grow where they should not grow.

After the cancer germ excitement last summer, one of our Topeka papers carried an advertisement from an enterprising and up-to-date manufacturer of cockroach powder. We were told that cockroaches carried the cancer germ and that this powder was "Death to cockroaches."

Most of us know something about vitamins, but do we know enough to keep away from companies that are placing condensed vitamins on the market? Our food analysts tell us that these vitamins are in the food we eat daily. They are in milk, butter, green vegetables, etc. Here they are fresh from the hand of God, and why buy from any company? It is claimed by those who know the most about these life-giving properties that attempts to concentrate them usually result in their destrucion. They are very unstable, and heat is detrimental to some of the forms. It is possible that a way may be found to concentrate vitamins, but until the real scientists tell us that it has been done and just what commercial product is reliable, let us take our vitamins straight.

The Journal of the American Medical Association runs a funny column called "Tonics and Sedatives." The following is taken from that column:

"Copied from the Orlando, Fla. Sentinel, Chicago, Oct. 13, 1925, via Associated Press. The atmosphere of seacoast states such as Florida and California contains vitamin A. That is the reason for the beneficial effect of such climates on persons with ailments like Bright's disease. Also because the prevailing winds are from the Pacific ocean and free from dust, this clear atmosphere allows the ultraviolet light to reach California in great abundance. The same is true of Florida."

The comment made on this little article is that this air is "hot air."

There was a time when quack medicine was exemplified by Peruna, but this is not true any more. Following closely behind the true scientist are a lot of camp followers, who seize upon every new thing, regardless of its value, and by using a lot of scientific verbiage, are able to fool even our more intelligent public. The very fact that people do know a little about the subject makes them more likely to be deceived by these high-sounding phrases.

The Metropolitan Life Insurance Company, which is ever mindful of the health of the people, as are all life insurance companies—for financial reasons—purchased a full page in the July 25th number of The Literary Digest last summer, which bears directly upon what I have just said. I copy part of it. "The old patent medicine fakir knew well the magic of print. And the army of quacks who follow him have made use of this same magic. Most men and women accept without question printed statements,

which they might discredit, were those same words spoken. Never before in the known history of the world has there been such an orgy of fake cures as there is today. You will find quacks trailing along in the wake of every announcement of important medical research."

The Journal of the American Medical Association deplores the fact that certain persons are now advertising that they will remove superfluous hair by means of the x-ray. How very up to the minute this does sound! And the statement is true enough. They can remove hair with the x-ray. But why use so powerful and dangerous a thing as an x-ray to remove objectionable hair? X-ray burns are serious thing. Would you be willing to let a cosmetician work over you with an x-ray machine?

Since this paper was written, there has been a national meeting of scientists in Kansas City. I copy the following from a report of the meeting in The Topeka State Journal:

"Dr. H. E. Bernard of the Division of Social and Economic Science, says that cults and quackery in the medical profession and more especially in the field of nutrition are increasing. Every contribution to the welfare of the race like the x-ray, radium, insulin, vitamins, etc., floods society with ignorant applications of these discoveries."

Every bona fide new remedy is hailed by the honest physician as a possible savior. which will take care of a large group of ailments. But time always proves that its sphere of usefulness is limited. This brings me to the definition of a cult. A cult in medicine is a complete system of cure, which is the product of one man's mind. While there may be a grain of truth in the system, this little bit of truth is not enough upon which to build a complete system of cure, and this is where fraud enters.

A few years ago there arose a gigantic fraud, which I think might never have come about if the Wassermann reaction for syphilis had not become quite generally known. I refer to the so-called blood tests for cancer, which were promulgated by a man named Abrams. I understand that this man had graduated from a medical college, but he fell from grace and became a quack. Knowing that the public was more or less familiar with the Wassermann test, he had little trouble in foisting upon them his blood reactions for cancer. For to the untrained mind, the one is just as reasonable as the other. Blood specimens poured in to the so-called laboratories, the reports from which were models of craftiness. They usually said that cancer had been found, or that there was reason to believe that cancer would develop in the more or less distant future. Some one sent a chicken's blood, and a report of cancer came back. On this report a case was started in the courts. Abrams did not live long after his scheme was working, but in the short time that he did live he amassed a great fortune.

Now that I have aroused your suspicion of everyone and everything, what can I give you that may aid you in making discrimination? I have three rules, or we might call them tape measures, that you can use in measuring any new proposition. The first one is: Does it claim too much? The second: Is it primarily a money-making scheme? And third: Has it stood that greatest test of all—the test of time?

I am closing with a few words from our good friend, Edgar Guest:

"Each trade will draw the charlatan and knave,
The trickster and the liar and the cheat,
But those who love the work are strong and brave,
And scorn the base temptations which they meet.

"They seek a joy that profit cannot bring,
They have a pride the purse cannot supply,
They have a high ideal to which they cling,
A goal ahead for which they dare to try.

"These are the good men known in every trade,
On character they build from year to year,
They stand behind their work and all they've made
While charlatans and tricksters disappear.

"Idealists, men call them, for they hold,
The task is greater than the little gain,
Nor would they for a petty sum of gold,
Upon the task they follow leave a stain.

"Let cynics scoff and point the cleverer way,
Let weak men for the base temptation fall,
Tricksters and sharpers have their little day,
But men of high ideals outlive them all."

The Relation of the Clinician to the Laboratory

ALBERT S. WELCH, A.B., M.D.,
Kansas City, Mo.

Read before the Douglas County Medical Society, February 4, 1926.

The clinician and the laboratory man are farther separated from each other than most of the so-called specialists. The laboratory worker makes little contact with the living patient. His conclusions are based on examination of the samples presented to him.

Rationally, the chief of any medical

situation should be the physican who has had the case in charge from the outset. He should elicit the history, make the physical examination, interpret the laboratory reports, and advise concerning surgical intervention. However, the prastitioner is often ruled by the laboratory just as he frequently accepts the dictum of the surgeon. It is not logical that a man who examines a small piece of tissue under the microscope should, as a general rule, know more about the case than the physician who has attended the patient for days or even years.

Specialists are necessarily limited in their knowledge. Proper allowance should be made for this. The clinician cannot expect from his pathologist a clear-cut diagnosis on every tissue sent for examination. The pathologist should not volunteer uncertain diagnoses.

The laboratory man with his instruments of precision is in a position to make accurate reports. The reports should be simple, precise, brief yet complete, carefully worded, and with the emphasis properly distributed because they are usually momentous to the physician hard pressed in arriving at a diagnosis.

On the other hand, the cautious clinician, ever mindful of the human trait of making mistakes, will accept the laboratory reports with a certain amount of reserve, even when they emanate from the best laboratory in the country.

Where discrepancies occur, it is uncharitable for either the laboratory man or the clinician to blame the other. Each should first search his own records with extreme care. A clinician who received too many reports of "hemolysed specimen" from his Wassermann laboratory blamed the technician. However, after two weeks painstaking search, it was found that the clinician had placed his specimens in cheap alkaline glassware. Meanwhile the technician, sensitive to the insult, had resigned from her position.

Carefully worded reports from the conscientious pathologist are exceedingly valuable to the clinician. The pathologist cannot be too meticulous in the terms he employs,—therefore he writes "surfaces made by cutting" instead of "cut-surfaces" and "consolidated lung regions" instead of "lung areas."

The clinician must not be disappointed if his urine report states "a copper-sulphate-reducing substance is present" instead of reports "gonorrhoea" because he has found Gram-negative intra- and extracellular biscuit-shaped diplococci. If he reports "organisms resembling gonococci", the clinician who knows the *source* of the smear and many other things about the case can draw his own conclusions.

The accurate report following examination of a dog's brain should not be "positive rabies", but "Negri bodies present," or "bodies characteristic of rabies found."

A cautious clinician who ordered two smears sent to the laboratory and received a report of "gonococcus-like organisms in pus from the groin of Mr. A." and "no gonococci in the urethral discharge of Mr. B." did not write a paper entitled "The Rare Finding of Gonoccocci in a Buboe" nor did he belittle the laboratory for mixing the slides. He again sent smears from these patients and saw that his orderly labeled them properly.

A brother and sister had throat cultures taken at the same time. The laboratory report was negative diphtheria" on the boy who had a dirty pharyngeal membrane, and "positive" on the girl whose throat appeared healthy. But the clinician, without repeating the cultures, decided that the tubes had been mixed and put the boy in a contagious hospital while his sister was sent to school. The boy's throat healed rapidly while the sister had a severe attack of diphtheria!

On a man with history of intermittent epigastric distress resembling that of peptic ulcer, and a sudden severe pain after eating, an interne found a leukocyte count of 24,000 and made a diagnosis of "perforated gastric ulcer." But the wily surgeon hesitated to operate until another cell count was done. It was only 7,000. Dr. Herrick[1] wrote of a modest interne who failed to report a white cell count of 18,000 because it seemed incompatible with the other symptoms recorded. In *this* instance the cell count was probably correct.

There is a coronor's physician in Chicago who when weighing organs always has the weights read by two individuals. If he himself makes the reading, he has another man check it.

A pathologist refused to change his diagnosis of "tuberculosis" made on a testicle and was examined microscopically, although the patient had a positive Wassermann and both his skin rash and nodules in the other testicle disappeared during two weeks specific treatment. The pathological diagnosis was based on the presence of unusual

1. Herrick, Jas. B.: The Clinician of the Future, J.A.M.A. 86: 1, Jan. 2, 1926.

giant cells and disseminated lymphoid and epithelioid cells; but tubercle bacilli were never demonstrated.

This same pathologist diagnosed "cystitis or pyelitis" on the presence of many leukocytes in centrifuged urine from a little girl. But the surgeon operated the child for obscure suppurative mastoiditis and the next day the urine contained very few leukocytes.

It is easy for the clinician to let the laboratory make his diagnosis for him—especially in the free dispensaries where laboratory work costs neither the patient nor the doctor. Therefore the physician who perhaps is in a hurry to get to his office, without eliciting from the patient any more information than that she has "pain in her stomach," orders a complete blood count, urinalysis, Wassermann, blood chemistry, basal metabolism and x-ray of the gastrointestinal tract. Such work requires a large amount of the laboratory worker's time and wears him out. He loses interest, and notwithstanding the mechanical features of laboratory work, good reports deports depend on mental skill. The laboratory man is grateful to the physician who sends a note with his request for a work such as: "Erythrocyte count, hemoglobin and smear for evidence of lead poisoning." Attention is focused and the technician has a definite object in view.

Some clinicians read a little but not enough, and ask for difficult, useless laboratory work. An unreasonable internist demanded quantitative guanidin tests on blood. Then he asked the laboratory man for the normal figure and was surprised to learn that it had never been established. This clinician became impatient because quantitative sugar estimations were not made on routine urine specimens. It was necessary to explain to him why quantitative estimations are ordinarily only of value on the twenty-four hour specimen.

Another clinician asked for a high-power-field leukocyte count on uncentrifuged ureteral urine. This suggestion was promptly acted upon and appreciated by the laboratory man.

To properly evaluate laboratory reports, it behooves the clinician to have a reading knowledge of the technic of the work requested, or better yet some laboratory experience of his own. In like manner, a little clinical experience is worth something to the laboratory man who would make clinical diagnoses "sight unseen."

The laboratory during the last fifty years has risen rapidly from a theoretical and experimental into a valuable practical part of clinical medicine. At times it gives information in no other manner obtainable. An ophthalmologist had in his care a girl with chonic keratitis. Her Wassermann was negative. Clinically the case apepared to be tuberculosis. The new Kahn test for syphilis was suggested, run, and found strongly positive.

As a general rule, however, the laboratory is chiefly useful as a diagnostic check. By means of the five senses, the clinician finds evidence to limit his differential diagnosis to a few conditions. When history, physical examination and therapeutic tests have apparently been exhausted and doubt still remains, then laboratory aid should be sought. Thus the diagnosis may be clinched, or a new clue obtained.

The following is cited as an example of harmonious working of the clinician, laboratory and surgeon. Dr. V.'s father, eighty years old, ate some canned cherries. A few hours later, he had generalized abdominal pain and vomited. He developed a cough. Examination revealed rales at the lower part of the right chest, tenderness at McBurney's point, and practically normal temperature, pulse and respiration. In the differential diagnosis were considered food poisoning, pleuritis and appendicitis. The late B. W. Sippy, who was in charge of the case, ordered repeated leukocyte counts and one revealed more than 30,000 cells. Dr. V., the patient's son, believed the case one of food poisoning. Dr. B., the consulting surgeon, thought the case was pleuritis. But Dr. Sippy declared he had never seen either food poisoning or simple pleuritis produce a white cell count of 30,000. On Dr. Sippy's recommendation the patient was operated. There was found a gangrenous appendix at the point of perforation.

———℞———

BELL MEMORIAL HOSPITAL CLINICS

Clinic of H. R. Wahl, M. D.

HODGKIN'S DISEASE (ABDOMINAL TYPE).

This patient is a young man 30 years old who comes in complaining of weakness, pain in back and diarrhoea. His present trouble began a little over two years ago with severe pain in the left hip joint particularly marked at night. It was throbbing in character and varied from a few minutes to two hours duration. His doctor called this condition sciatic rheumatism but give him no relief. A year later the pain moved towards

the middle of the back and then spread to both hip joints.

Six months after the onset of these pains "lumps" appeared under the left arm and gradually enlarged to the size of a hen's egg. Then nodules appeared in his neck and under his right axilla and in his groins. There was no pain, chills or fever. A year before admission the patient received repeated x-ray and arsenic treatments. Five hours of deep therapy was given just below the spleen. No apparent improvement followed.

Progressive weakness has been a marked feature of the patient's illness. He had also lost much weight, and had 10-12 bowel movements a day though this diarrhoea is not constantly present. There have been some night sweats and he has not been able to walk for the past year.

The physical examination shows a weak anemic poorly nourished man about 35 years of age. His teeth are in bad shape and show considerable pyorrhoea and caries. The tonsils are buried and appear inflammed. The pulse is rapid being 92, the blood pressure low 92/36, the liver is enlarged, extending 3 cm. below the costal margin. The back showed scars of an attack of herpes zoster which he had several months before entering the hospital. The cardiac dullness was enlarged. The axillary and cervical glands were slightly enlarged, easily palpable and unusually hard and firm in consistency. Shotty glands could also be felt in the groin. No definite masses were felt in the abdomen. The spleen seemed to be enlarged. There was considerable pain of a sharp shooting character on pressure on the iliac crests and lower vertebrae.

The urine examination was negative. The blood showed a progressive anemia of a secondary type, the red blood count dropping from 2,950,000 on admission to 800,000 shortly before death. The hemoglobin fell from 78% to 20%. The white count varied from 9,800 on admission to 2,600 shortly before death. The differential count showed nothing abnormal. Numerous other laboratory tests such as spinal fluid examinations and blood chemical examinations showed nothing of value. X-ray examination showed an anomalous transverse process on the fifth lumbar vertebra. The diarrhoea was irregular with periods when it was almost absent. Nothing abnormal was noted in the stools.

The largest lymph node noted was one in the axilla about 1 cm. in diameter. It was removed for diagnosis and the pathologist reported Hodgkin's disease.

While in the hospital systolic and diastolic murmurs developed over the base of the heart and the pulse took on a distinct Corrigan character. There was some aching in the knees and feet and considerable restlessness and nervousness. The temperature was irregularly elevated but never over 102°. The patient was given repeated x-ray treatments and also two transfusions without any lasting effect. A few days before death the blood pressure was low, the heart seemed enlarged and the sounds faint.

The clinical diagnosis was Hodgkin's disease though a malignant disease of the mediastinum was suspected. Also a low grade infection with a progressive secondary anemia was also considered by the clinicians. The pain, the diarrhoea and small size of the superficial glands was not explained by the diagnosis of Hodgkin's disease.

At the autopsy no enlraged cervical or axillary glands were noted. Marked edema of the legs was present. There was about a liter of clear straw colored fluid in the peritoneal cavity. The mesenteric glands were not much enlarged but were unusually indurated and shotty in character. Those about the hilum of the liver seemed largest, measuring 1-2 cm. in diameter. The thoracic cavities showed nothing unusual.

Here we have the organs showing the main lesions. The heart is slightly enlarged and is covered with this loose soft yellowish shaggy exudate that can be easily pulled off. It represents an early acute fibrinous exudate of not more than a few days duration.

This liver is enlarged. Its most peculiar feature is the presence of grayish white poorly defined nodules in the portal areas varying from 1 to 5 mm. in diameter. Most of these are subcapsular in location. They suggest tumor nodules but are not sharply outlined. The gall bladder was normal.

The spleen is as you see, considerably enlarged, weighing 260 grams, and has a firm meaty consistency. On the surface and scattered throughout its substance there are small grayish nodules irregular in size and shape and similar to those in the liver. They vary from 2 to 4 mm. in diameter. Similar white nodules are occasionally seen in the substance of the kidneys.

Here are some of the lymph nodes. They are not very large but their hard woody consistency and homogenous white cut sections are unusual.

Here we have another unusual organ—a part of the large intestine, the walls of which are thickened and on the inner sur-

face there are superficial ulcers, some partly covered with fibrin, others with blood clots. Evidently we have here a membranous colitis with large irregular superficial ulcers.

The microscopic examination of this material is interesting and very instructive. The lymph nodes are small but have the typical picture of Hodgkin's disease which is marked schlerosis with destruction of the normal architecture, proliferation of endothelial cells, infiltration with eosinophilic leukocytes and the appearance of peculiar giant cells known as Dorothy Reed giant cells. These are quite characteristic of Hodgkin's disease and show a large lobulated nucleus. In some of the lymph nodes the sclerotic process is so marked as to leave nothing but a dense hyaline mass containing a few scattered cells. Such lymph glands were found only in the abdominal cavity.

The white nodules noted in the spleen, liver and kidneys showed a granulomatous lesion similar to the lymph nodes, showing the characteristic Dorothy Reed giant cells leaving no question but that they represent a visceral extension of Hodgkin's disease.

While this is undoubtedly a case of Hodgkin's disease, it represents an unusual type and illustrates how variable and peculiar this disease may become. While most cases are of the superficial type affecting the cervical and axillary glands, here the striking lesions were in abdominal organs, the thoracic organs being unaffected. Another interesting feature is that the lymph glands even in the peritoneal cavity do not stand out as prominently as the changes in the spleen and liver. It is true that in most cases of Hodgkin's disease, these granulomatous nodules are found in the liver and spleen at autopsy but usually with much larger glands.

It may well be that the prolonged x-ray treatment may have reduced the prominence of the changes in the lymph glands especially since a large gland was noted in the axilla long before the patient came under our observation. It is well known that x-ray treatment will cause the lymph glands to reduce in size but whether it improves the final condition is still a matter of dispute. It is said that those cases of Hodgkin's disease with small indurated lymph nodes are especially resistant to x-ray therapy and the results with it are accordingly very disappointing.

In connection with the x-ray treatment especially the prolonged deep therapy applied to the spleen the finding of a membranous colitis is especially significant. It is quite possible that the patient's persistent diarrhoea was the result of the x-ray therapy given in excess. Whipple and others have emphasized the destructive effect of such exposure to the intestinal epithelium in experiments with dogs. In other words, the mucosa of the large intestine is very susceptible to x-rays. Diarrhoea is not at all a charactertistic symptom of Hodgkin's disease.

The pain which the patient had probably was not directly related to Hodgkin's disease but was brought about by the pressure of the anomalous tranverse process of the fifth lumbar vertebra causing sacral strain.

The acute pericarditis may be regarded as a terminal infection and may well have been the immediate cause of death, the patient's resistance having been lowered so as to permit this infection to develop.

Hodgkin's disease occupies a peculiar position. In some respects it behaves like a chronic progressively fatal infection. In other respects it acts more like a neoplastic process with changes involving the viscera towards its termination. It seems to occupy a position between the leukemias on the one hand and lymposarcomas on the other. Besides the anemia the blood changes are not striking though an increase in large mononuclear leukocytes and transitional cells is said to occur. While this is frequently true it was not present in this case. The constant presence of some fever and the occurrence of foci of infection in the mouth in this case suggests focal infection as a possible factor in the production of this disease.

Clinic of Dr. Hugh L. Dwyer

Department of Pediatrics

HERPES ZOSTER AND CHICKEN-POX

During the past three or four years there have been many reports, especially in the British and French medical literature, of chickenpox, following contact with a person suffering with Herpes Zoster.

Many of these reports carefully exclude the probability that the affected individual was exposed to chickenpox, and offer good evidence that the two conditions are brought about by the same cause. It has been suggested that the two conditions are probably different manifestations of the same disease.

The most exhaustive report in America is the one of McEwen in 1920. He reported Herpes Zoster in a physician followed in five days by varicella in the same patient,

and in ten days by varicella in his three-year-old daughter.

At that time McEwen found 57 cases, showing the association of Herpes Zoster and chickenpox. He classified them into four groups, as follows:

Group 1., comprising 40 cases, about two-thirds of the total. In this group Herpes in one patient was followed in about 14 days, by varicella in some who were exposed.

Group 2, comprising 12 cases in which Herpes and varicella occurred successively in the same patient. The time interval between the appearance of the two diseases was from one to eight days, with an average of three and one-half days.

Group 3, comprising two cases, in which Herpes Zoster was followed in the same patient by varicella, and later varicella in others who were exposed.

Group 4, comprising four cases in which Herpes Zoster followed exposure to varicella.

Mary K., aged 8 years, was seen October 26, 1925, suffering with Herpes Zoster. The lesion was an niflammatory band covered with vesciles, on the left side of the body extending from near the vertebra around the axilla to the midclavicular line. The lesions covered the eighth and ninth ribs. Twelve days later her infant brother, six months old, became ill with a generalized chickenpox aruption. Three days later her cousin, five months of age, developed chickenpox. This baby had been at the home of the Herpes Zoster patient exactly fourteen days before, and had not been otherwise exposed.

It is assumed therefore that these two cases of chickenpox developed as a result of the exposure to Herpes. The patient with Zoster had a history of having had chickenpox several years ago and had several definite chickenpox scars on her body.

This observation is in agreement with several other reports, that an attack of chickenpox does not protect against Herpes. It has also been found that convalescent serum from chickenpox patients will protest against chickenpox but not against Herpes. Certainly therefore, the two conditions cannot be different manifestations of one disease, as have been suggested.

Complement fixation tests, according to Netter, show a crossed affinity of the antigens resembling smallpox and chickenpox.

New Silver Compounds

The silver salts have lost none of their prestige, notwithstanding the flood of topical antiseptics and germicides which is overflowing the market. On the other hand, certain improvements are being made, with the object of avoiding the irritating or staining features of the older silver compounds.

By an ingenious combination of silver iodide with a gelatinous protein, this salt has been made impervious to the action of sunlight, so that its solutions (or suspensions) do not turn dark on exposure. Thus the staining effect of the silver is avoided. And it would appear from bacteriologic tests made by the manufacturers (tests which, of course, any bacteriologist can repeat) that the germicidal activity of the new silver preparation is at least equal to that of pure carbolic acid; moreover, that, whatever the concentration of the solution, inflammed tissues are not irritated by its application.

The name of the product referred to is Neo-Silvol, and the manufacturers are Parke, Davis & Co. Some of the applications of Neo-Silvol are mentioned in an advertisement which appears in this issue.

———R———

Legislation now under consideration in Congress aims to modify the interpretation of the federal Food and Drugs Act so that food products shall not be deemed adulterated or misbranded "because of having been preserved or sweetened with an article commonly known as corn sugar, also with an article known as fruit sugar or levulose." From the standpoint of nutrition and health, no reasonable objection can be offered to this proposal. It should be emphasized that in the new pharmacopeia "glucose" connotes the syrupy substance: the pure substance such as is used for treatment of hyperglycemia following a large dose of insulin is now described under the name of dextrose (sometimes called d-glucose; formerly described also under the name anhydrous glucose). This may lead to confusion, as many physicians still speak of 'glucose" injections, which under the new pharmacopeia are really "dextrose" injections. (Jr. A. M. A., Feb. 27, '26.)

———R———

Intolerance is a primitive hangover trait from the cave man.

———R———

All doctors are quacks when people are well.

THE JOURNAL
of the
Kansas Medical Society

W. E. McVEY, M.D. - - - Editor

ASSOCIATE EDITORS—SAM MURDOCK, L. B. SPAKE, P. S. MITCHELL, O. P. DAVIS, J. T. AXTELL, E. S. EDGERTON, E. G. MASON, J. D. RIDDELL, C. S. KENNEY, D. R. STONER, J. A. DILLON, W. F. FEE.

Subscription Rates. $2.00 per year, 20c single copy. Advertising rates furnished promptly on application.

LIST OF OFFICERS—President, F. A. Carmichael, Osawatomie; Vice President, B. F. Morgan, Clay Center; J. E. Hawley, Burr Oak; F. H. Smith, Goodland; Secretary, J. F. Hassig, Kansas City. Treasurer, Geo. M. Gray, Kansas City.

COUNCILORS—First District, Sam Murdock, Sabetha; Second District, L. B. Spake, Kansas City; Third District, P. S. Mitchell, Iola; Fourth District, O. P. Davis, Topeka; Fifth District, J. T. Axtell, Newton; Sixth District, E. S. Edgerton, Wichita; Seventh District, E. G. Mason, Cawker City; Eighth District, J. D. Riddell, Salina; Ninth District, C. S. Kenney, Norton; Tenth District, D. R. Stoner, Ellis; Eleventh District, J. A. Dillon, Larned; Twelfth District, W. F. Fee, Meade.

SOME PROBLEMS IN MEDICAL ECONOMICS

At times something has been said in these columns about the contribution made by the medical profession to the public debt, a debt, at any rate, the public has assumed. The fact that a considerable amount of the public's funds is spent in caring for the destitute is an acknowledgment of its obligation—an obligation to supply their needs, to house, clothe and feed them and provide medicine and care for them in time of sickness. To this end poor farms are established, city and county hospitals are built; but on a scale hopelessly inadequate to meet the requirements. And thus the public, as a whole, shifts the greater part of its obligation to the churches, to charitable and fraternal organizations, to charitably inclined indiviyiduais and to the medical profession.

In this number of the Journal is reproduced an article on "Our National Doctor's Bill—The Public's Debt," in which an effort is made to compute the value of the gratuitous services rendered through medical institutions. According to this estimate their services represent a total cash value of $135,533,554.00 per annum. This would be an annual per capita donation in gratuitous services by the medical profession of $821.00 to the medical institutions supported by public taxation, by charitable organizations or by charitably inclined individuals.

This does not include the free services given to families or individuals by physicians in the routine of a general practice.

It is quite certain that the members of no other profession average so large a contribution to the public debt. It is safe to assume that an equal number of the men of great wealth will not average such large contributions to charity, in proportion to their average incomes, as do the members of the medical profession. All the merchants in all the towns and cities in the country will not average so large a donation from their stock in trade to the needs of the poor.

But these contribute liberally to every charity. It is not their fault that the medical profession bears such a heavy burden. It is the fault, if a fault, of the medical profession itself. In its early history it assumed the obligation of caring for the sick and has never permitted its release from that obligation. Neither church nor state has encroached to any considerable extent on this prerogative of the medical profession. Even the growing tendency to commercialism in the practice of medicine has in no way minimized this obligation to give free service to the poor.

It is an easy matter to point out the economic error in such a disproportioned responsibility. There are a dozen reasons why all the needs of the poor and afflicted should be provided by taxation but there is a factor in this that is greater than business principles or public policy. Call it sentiment if you like, but there is in every normal man a desire to give, a sense of great satisfaction in being able to give. To the medical profession is granted a privilege greater than is granted to any other group of men, the privilege and the power to give relief from pain and suffering, to give even life when the death angel hovers near.

The article referred to above was prepared in an effort to justify the campaign

now being made to establish homes for aged and indigent physicians. No one can question the good will of the men who are making this campaign. No one will deny that the services of the medical profession to the public have been of inestimable value, or that the founding of these homes will be an appropriate acknowledgment of those services. In fact the proposition should receive the hearty applause from the whole profession.

Yet one may not escape a sense of humiliation in this admission of its improvidence and the necessity for soliciting contributions from the laity to care for the aged and decrepit in our ranks. This indifference to the welfare of its members suggests that, in spite of its boasted fraternalism, there is lacking in the medical profession that sympathetic cohesion so dominant a factor in the organization of industrial groups.

It is impossible for the medical profession to immediately provide the funds for such an elaborate outlay as is contemplated by the Physicians Home, Inc., but it is not too late nor impossible to begin to provide for the future needs of our disabled members; either through the organizations now in existence or others that may be formed for the purpose.

While a few of the kind hearted philanthropically inclined laymen are lending their services to provide for the care of our aged and destitute members, other forces are constantly endeavoring to curtail the boundaries of the doctor's field of labor, to divert more and more of his legitimate business to industrial hospital associations and to government agencies.

The following is extracted from an editorial appearing in the Journal of the American Medical Association, January 23, 1926: "Through paragraph 10 of section 202 of the World War Veterans' Act, 1924, veterans of the Spanish-American War, of the Philippine insurrection, of the Boxer rebellion and of the World War, suffering from neuropsychiatric or tuberculous ailments or diseases, or from paralysis agitans, epidemic encephalitis or amebic dysentery or from the loss of sight of both eyes, are entitled as a matter of right to treatment and care in hospitals under the Veterans' Bureau, at government expense, whether their ailments or diseases are or are not of military origin. Veterans of any war, military occupation or military expedition since 1897 are entitled to that treatment and care whenever the director of the Veterans' Bureau finds facilities available, no matter what may be the nature of their disabilities, and no matter what may be their origin. The government pays traveling expenses incident to such treatment. Whether an applicant is rich or poor, able to pay for treatment or belongs to the dependent classes, makes no difference, except that, in admitting patients of the latter class, preference is given to those financially unable to pay. The only condition the applicant must comply with is to prove illness or injury, to abandon his home physician and the hospitals of his own place of residence, and to enter a government institution, for treatment by physicians paid by the government. . . .

"Bills are now pending in Congress to extend to every beneficiary under section 10 of the World War Veterans' Act, 1924, outpatient treatment, in addition to the hospital treatment already authorized, and to grant the privilege of hospitalization and of outpatient treatment to Spanish-American War nurses, contract surgeons and contract dentists. Another bill proposes to extend a like privilege of hospitalization to all disabled ex-service men in the war between the states, including Confederate veterans. Another bill may be construed as entitling all civilian employes who served overseas during the World War to hospitalization at any time during the remainder of their natural lives, for any disease or disability. Other bills prpose to give every disabled ex-service man, including Confederate veterans, the degree of disability not being stated and regardless of the origin of such disability, not only hospital care, but medical treatment, nursing, and all necessary care."

By what process of reasoning such a provision as that could be justified, politicians may explain or try to explain.

By whatever process of reasoning free medical services to veterans of the World War is justified, the same line of reasoning will justify free medical services to the families of these veterans, since they are presumably dependent on them. One could quite as easily also justify free rent, free food and free clothing, for both the veterans and their families, at the expense of the government.

The government is under obligation to give whatever relief is possible to those whose disabilities were acquired in its service; and the medical profession will assist in doing so to the extent of its ability; but it has generally been regarded as obnoxious policy for a state or national government to enter into competition with its citizens in any of their business enterprises.

With the prosperity now experienced in this country there seems no good excuse for any further experiments in government paternalism.

The Sheppard-Towner act has nearly reached the end of the experimental period for which it was enacted. Whether the members of Congress will find sufficient evidence of its benefits to extend the period of trial is yet to be learned. No evidence has so far been produced to show that the death rate of infants and mothers has fallen more rapidly since the Sheppard-Towner Act has been in operation than it was falling before. No evidence has been produced to show that the death rate of infants and mothers has fallen more rapidly in those towns and counties where the money provided by this act has been available than it has in places where the funds were not available — assuming of course that wherever the funds were available they were expended in accordance with the provisions of the act. If any records have been kept by the Children's Bureau that show that sickness has been prevented or lives saved by the Act they have not yet been made public. A report sent out some time ago indicated, as unprejudiced minds would interpret it, that those in charge of the administration of the act had practically exhausted the fund appropriated and were about ready to begin to do something toward carrying out the purposes for which the bill was presumably enacted. There can be no question, however, but something has been accomplished, perhaps not entirely unforseen by the most enthusiastic advocates of the measure. It has accomplished the expenditure of a considerable amount of money and has afforded fairly lucrative jobs for a considerable number of people.

This is one of several recent national legislative enactments that could be dispensed with, without any perceptible loss benefit to the people at large, but with a considerable saving to the government.

———R———

CHIPS

For some years the Council has been questioning the value of antistreptococcus serums. These products have been retained in New and Nonofficial Remedies with the caution that on the basis of clinical reports there is perhaps justification for the use of the serum in streptococcus infections, but that there is no scientific basis for it. In consideration of a report prepared by Dr. Emil Novak on the basis of a questionnaire sent to a number of surgeons, gynecologists and obstetricians, the Council voted to retain antistreptococcus serum preparations in New and Nonofficial Remedies provisionally.—(Jour. A. M. A., Feb. 6, '26.)

Some time ago the United States Public Health Service issued a warning that the "National Health Service," Washington, D. C., was attempting to capitalize the research work done by the United States government and to confuse the public into believing that it was in some way identified with the Public Health Service of the government. The offices of the National Health Service are no longer in Washington, D. C., but in New York City. The concern is either operated from two addresses —17th West Sixtieth Street and 70 Fifth Avenue—or there are two concerns of the same name. From the first address a so-called "Book of Health," a urinalysis "health service" and a line of fad foods are sold. From the Fifth Avenue address letters are sent to industrial concerns urging

them to purchase "a remarkable discovery for kidney disease, which has produced unbelievable results even in extreme cases where all other means have failed." An analysis of Rensano made in the A. M. A. Chemical Laboratory confirmed by pharmacologic tests carried out at the University of Illinois showed that Rensano is essentially milk sugar with a minute amount of alcohol. This inert and therapeutically worthless product is exploited to individuals and industrial plants with the suggestion that working men suffering from such serious conditions as nephritis and diabetes should be given this product in lieu of medical attention. (Jr. A. M. A., Feb. 13, '26.)

The term "solidified formaldehyde" is used loosely, sometimes denoting dry paraformaldehyde but more generally denoting a solidified mass of soap, tallow, or such substance with formaldehyde. When paraformaldehyde is heated formaldehyde and some sublimed paraformaldehyde are given off. The amount of formaldehyde yielded depends on a number of conditions. In the case of solidified formaldehyde, the concentration of the formaldehyde and the amount of vapor evolved must be known to judge its efficiency. Fumigation as a means of preventing the spread of disease is regarded as far less important than formerly. (Jr. A. M. A., Feb. 13, '26.)

The harmfulness of acacia in the treatment of shock and hemorrhage has been pointed out repeatedly. The changes resulting from the use of this otherwise inert agent bear on the many sided question of intravenous therapy. The investigations of Hanzlik have shown the wide changes which occur in the blood and tissues. Confirmatory of the work of Hanzlik, it was found that the blood after injection of acacia is definitely altered. The danger of intravenous injection of acacia has been fully demonstrated. The warning against acacia may be extended to other blood substitutes and in fact to intravenous injections in general. (Jr. A. M. A., Feb. 20, '26.)

The arsphenamines are so reactive that they may not be combined in solutions with mercury salts for intravenous administration. Alteration of drugs, rather than simultaneous administration, is the present trend of antisyphilitic medication. Mercury compounds administered intravenously should be given more frequently and over a longer time than is permissible for the administration of arsphenamine in sufficiently large doses. Furthermore, it is generally advisable not to give intravenous mercury medication, but to employ the forms such as the insoluble salts (or certain soluble salts) intramuscularly or to apply inunctions. (Jr. A. M. A., Feb. 20, '26.)

"I dressed him; God cured him," said Ambroise Pare.

The chemist has succeeded in changing lead to mercury and thalium, another way out for wicked man.

Green lumber is dried in twenty-four hours by the vacuum process. We are encouraged.

Heat waves transmitted by radio is the proposed new kink in air service promised by the scientist.

Insulin has been developed in crystal form by Dr. John Abel of the John Hopkins Medical School.

Synthetic (just as good) insulin will soon be on the market.

Osler said, "A man rarely dies of the disease from which he is suffering, but of terminal infection." In other words the big bugs got him down and left the details to the weaker and little bugs.

Any drug which has the power to do good when rightly used, has the power to do harm if wrongly used.—Hare.

Have the readers of this journal or any other journal ever seen a case of cancer in an infant?

Vitamin X has been found and christened Vitamin E.

The discovers are Dr. Herbert M. Evans and Dr. K. S. Bishop of the anatomy department of the University of California. This vitamin stimulates reproduction in animals. It is found in lettuce, wheat germs, alfalfa and egg yolk.

Prohibiting the use of the foods named will do away, in a measure, with eugenic societies and at the same time prevent crowding.

A method of treating human ills cannot be useful and harmful.—Hare.

Ehrstrom ventures a fifty-fifty assertion as to whether high blood pressure shortens life or not. His observation of sixteen years and three hundred patients makes him a doubting Thomas.

A formula has been discovered for making synthetic chaulmoogra oil.

Dr. Martson T. Bogart, chairman of the

committee on chemical research on medical substances, of the National Research Council, is the authority.

Chaulmoogric acid which is the active principle of chaulmoogra oil, has been analyzed by Dr. Roger Adams, professor of organic chemistry in the University of Illinois. The claim is made that from sixty to seventy-five per cent of the cases (in the early stages) of leprosy are cured by the oil.

More proof of man's monkey origin: Heretofore it has been assumed that certain diseases with which the human being has suffered could not be transmitted to bruite animals and notably leprosy. Now comes Professor Renstierna, the famous Sweede, who has discovered a method of transmitting leprosy to monkeys.

—R—

Protest the Sheppard-Towner Act

The Sheppard-Towner Act will continue in force two additional years—until June 30, 1929—if two bills[1] introduced into Congress to accomplish that end are permitted to become law. Otherwise, the act will expire by a self-contained limitation, June 30, 1927. The proposed continuance of federal domination over health matters in which the state is constitutionally supreme is in itself pernicious. The proposal is, moreover, astutely timed to force on Congress at the very threshold of the next presidential campaign the question of making the system permanent. It will be remembered that the original proposal was also incorporated as a plant in the platforms of both leading political parties. The proponents of the Sheppard-Towner scheme are apt to brush aside facts and figures by an emotional appeal on behalf of mothers and babies. Any discussion of the scheme in the days immediately preceding a presidential campaign is certain to be complicated further by considerations of political expediency, arising out of the question as to who is going to deliver the women's vote, and where. The act became a law five years ago. Millions of dollars of federal and state moneys have been spent to enable its supporters to establish its merits. Who will say that the evidence submitted indicates that they have done so? Their present plea for the continuance of the scheme for only two years may well be construed as an admission that they have found nothing in the evidence that would justify them in asking for enactment of the procedure on a more lasting basis. The Sheppard-Towner Act has been condemned unreservedly by the House of Delegates of the American Medical Association. The pending bills to continue the act in effect are clearly within the ban of such condemnation. Now is the time to protest against their enactment. The Committee on Interstate and Foreign Commerce, House of Representatives, to which the House bill has been referred, at the present writing has not made its report. Even after it does so, the bill must be acted on by the House. The Senate bill is still to be acted on by the Senate Committee on Education and Labor, and by the Senate. If the Senate and the House agree on a measure, it will still have to be approved by the President. State associations and county societies, and the physicians of the country generally, should immediately telegraph or write to the President and to their Senators and Representatives protesting against the enactment of these bills.—(Jr. A. M. A., Feb. 6, '26.)

1. S. 2696, A Bill to Extend the Provisions of Section 2 of the Act Entitled "An Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy, and for Other Purposes," H. H. 7555, a Bill to Authorize for the Fiscal Years Ending June 30, 1928, and June 30, 1929, Appropriations for Carrying Out the Provisions of the Act Entitled "An Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy, and for Other Purposes," approved Nov. 23, 1921.

—R—

Superstition and Cancer

By THE PRODIGAL

Don't laugh—until you read this through.

Are you superstitious? Were your parents? Do you laugh about their superstitions regarding their planting potatoes when the moon was in certain phases? Well, he laughs best who laughs last. Would you be surprised if their superstition had a scientific basis?

Dr. D. T. MacDougall made the statement at Phoenix, Arizona, February 18th, at the convention of the American Association (Southwestern Section) for the Advancement of Science, bearing out the so-called superstition of our dads, as a fact. Dr. MacDougall is one of the world's chief authorities on plant life.

He said that while moonlight is reflected sunlight it consists of what scientists call polarized light, that is light vibrating in one direction. While ordinary light waves vibrate in all directions. British scientists claim that plants grow faster in polarized light. That certain bacteria grow faster in polarized light than they do in sunlight. There are certain bacteria that cause dead

fish to rot and makes them appear phosphorescent at night.

We conclude then, that what affects plant life affects animal life and "man being what he eats," polarized light, (for the vegetarian especially) will soon be in a class (second) as a therapeutic agent with sunlight—and—that it is not best to laugh at, treat lightly nor to call the accumulated experience of the human race, superstition, for it is based upon intuition and has turned out too often to have a scientific foundation.

The cancer bacillus has been isolated by Dr. Josef Schumaker of Berlin. He says it is a great big fellow. It is shaped like the letter "S" with nodules at the ends. It was discovered by a microscope magnifying only sixty times.

He says the bugs were in such numbers that they constituted one tenth of the entire area of the cancerous mass. The reasons the cancer bug has not been discovered before now is, probably, a too high powered microscope was used or the bacillus was so big they did not see it.

KANSAS MEDICAL LABORATORY ASSOCIATION

Some Points in the Examination of Sputum and Urine For B. Tuberculosis

By E. LEE TREECE

(From Department of Bacteriology, University of Kansas, Lawrence.)

The usual procedure in the laboratory examination of sputum and urine for B. Tuberculosis is the application of the acid fast stain to smears made of selected, yellowish bits of material from the sputum, or in the case of urine from the sediment after centrifugalization.

The fact that acid fast bacilli other than B. Tuberculosis may be found normally in both sputum and uncatheterized urine may cast some doubt upon the conclusion that the material is tubercular especially where the organisms are in very small numbers and where the clinical symptoms do not indicate Tuberculosis.

There has been a number of stains recommended for differentiating between B. Tuberculosis and other members of the acid fast group. Sherwood[1] after comparing such methods came to the conclusion that "Gabbett's, Ziehl-Neelson's, Pappenhiem's and Bunge and Trantenroth's methods are not at all reliable as means of differentiating the tubercle bacillus from the rest of the acid fast group." That "Fonte's method seems to be much superior to the other methods but not entirely reliable in urine and even in sputum examinations."

Since acid fast organisms that cannot be differentiated from B. Tuberculosis by staining are rather widely distributed in nature, other means of identification is often necessary and animal inoculation and cultivation should be undertaken. Sometimes the material is such that animal inoculation or inoculation of media may be made direct but usually preliminary treatment is necessary to concentrate the B. Tuberculosis and to destroy other organisms.

ANTIFORMIN METHOD

A 15-20% solution of antiformin is mixed with an equal portion of the sputum or urinary sediment. Shake until all masses are dissolved and dilute with an equal amount of normal saline, centrifugalize at high speed for 15-20 minutes, decant or pipette off the supernatent fluid and wash the sediment by adding distilled water and again centrifugalizing. The sediment may then be used for staining or animal inoculation.

PETROF'S[2] METHOD

Add 3% NaOH (normal NaOH may be used) to an equal amount of the sputum, urinary sediment, or pus. Shake well and place in 37°C incubator until the material has digested (30 minutes to 2 hours, usually). Neutralize to sterile litmus paper with N/HCl and centrifugalize 10 minutes at high speed, decant or pipette off the supernatent fluid, if the neutralization with HCl has been properly done, further washing of the sediment is unnecessary. This sediment may then be used for animal inoculation or cultivation.

ANIMAL INOCULATION

Guinea pigs are usually selected for injection. The injection may be either intraperitoneal or into the region of the inguinal lymph glands; in case of the latter, the glands in the region should be bruised.

The sediment should be sufficiently diluted with sterile saline so that it can be drawn up into a hypodermic. From .1 to .5 cc. of this sediment is then injected. The animal should be kept under observation. If the animal dies within 2 or 3 days it is usually due to a pyogenic infection accidental to the injection. If still living after 4 to 6 weeks, the animal may be killed and posted. If the injection has been intraperitoneal, the retroperitoneal glands, spleen and liver, should be searched for characteristic lesions. The inguinal glands

should be especially examined in case of an injection into that region.

The time necessary for diagnosis from animal inoculation may be shortened to 2 or 3 weeks by the injection of about 2 cc. of Tuberculin subcutaneously into the guinea pig at this time. If the animal is tubercular, it will usually die within 24 hours. A normal animal will resist several times this amount of Tuberculin.

CULTIVATION OF B. TUBERCULOSIS

Petrof's Method. The directions for preparing the media are as follows:

Five hundred grams of ground lean beef or veal infused over night in 500 cc. of a 15% glycerine in water.

Sterilize shells of a dozen eggs by washing in 70% alcohol, carefully break eggs into a sterile breaker, thoroughly mix whites and yolks with a sterile rod and filter through sterile gauze into sterile graduate. Egg mixture, 2 parts. Meat infusion, 1 part. Sufficient 1% aqueous gentian violet to make 1-10,000 dilution. Tube 3 to 5 cc. in sterile tubes and inspissate between 75° and 85°C. for several hours on three successive days.

If it is not convenient to use an inspissator, we have found that an Arnold steam sterilizer may be used by placing the tubes at the desired slant and regulating the temperature of the sterilizer to 75°-85°C. by leaving the door ajar. Heat one hour each day for three successive days. (This may also be used for sterilizing Loeffler's medium.) Some laboratories use the autoclave successfully in sterilizing such media by using special precautions.

Then to twelve tubes of Petrof's media are inoculated with the undiluted sediment. Smearing the entire surface of the slant with the material. The tubes should then be tightly sealed with flamed corks over the cotton plug or by saturating the cotton plug with melted paraffin.

The tubes should be incubated at 73°C. After about three weeks the tubes should be opened and the surface of the slant disturbed with a sterile needle. The stirring or the advent of fresh oxygen seems to stimulate growth as it usually appears in a week or ten days after this procedure.

Failure in the culturing of the B. Tuberculosis by this method may be caused by:

1. Failure to inoculate a sufficient number of tubes. Inoculation of a large number of tubes is necessary because; (a) there may be very few organisms in the sediment, and a single tube not be heavily enough seeded; (b) there is a tendency for molds to contaminate the tubes. These must be discarded. (c) Some tubes may be contaminated with other bacteria, and must be discarded.

2. Failure to properly neutralize the alkaline sediment.

3. Failure to prevent contamination of the sediment after neutralization. We have been particularly successful in this laboratory in employing this method for the isolation of original cultures, having had very few failures in obtaining good growth where an acid fast organism could be demonstrated by staining.

1. Sherwood, N. P. The Kan. Univ. Science Bull. Vol. X, No. 3, Jan., 1917.
2. Petrof, S. A.; Jour. Expr. Med. Vol. XXI, No. 1, Jan., 1912.

Technique of Nesslerizing

E. R. LEHNHERR

(From the Department of Bio-Chemistry, University of Kansas, Lawrence.)

The technique of good Nesslerizing seems to be very difficult for the individual to acquire. He will probably have fair success with pure solutions of urea containing the suitable amount of nitrogen, but when it comes to an unknown, such as urine, he is almost certain to experience difficulty. Invariably the beginner will have precipitation of the colloid formed, either immediately, after standing a short time, or even after placing the solution in the colorimeter cups. One cannot even be sure of the standard coming out good unless certain precautions are observed. This technique is the basis for the determination of ammonia, urea, and non-protein nitrogen (Folin's micro-Kjeldahl). Thus is seen the importance in having a good technique in the use of this reagent.

The principle of the procedure is the formation of a temporary, complex, colored colloid—the depth of the color depending on the amount of nitrogen present (within certain extremes). The colloid formed is no exception and is affected by the same physical and chemical agents that affect other members of this class.

The turbidity obtained may be due (in the micro-Kjeldahl) to the quartz pebble that has been acted upon by the strong acid mixture. In this case centrifuging will remove the difficulty. If, however, the centrifuging has driven a sediment of the reagent to the bottom of the tube, then the trouble must be sought elsewhere.

(a) A very important precaution is to have all the glassware absolutely chemically clean. This will include all beakers, pip-

ettes, test tubes, etc., that are to be used in the determination. This is especially important if Nessler's solution has been allowed to precipitate on the glass, or the receptacle has contained copper solutions. This is most easily accomplished by the rinsing with concentrated HNO_3. This precaution will obviate much trouble in immediate precipitation and prevent precipitation that would have occurred in the colorimeter cups.

(b) In many cases the concentration of the nitrogen is too great and will cause precipitation. This may be corrected by diluting the solution as much as possible before the addition of Nessler's reagent. In fact all solutions should be diluted (whether concentrated or dilute to start with) as much as is practical before Nesslerizing. The concentrated nitrogen tends to cause a too rapid formation of the colloid that is easily precipitated.

(c) The determination of urea in urine is very liable to cause precipitation because of the presence of so many inorganic salts. This may be remedied by using higher dilution of urine. This will not always solve the difficulty unless other precautions that are enumerated are taken into account. With the proper precautions there is no veritable excuse for the failure of any determination of urea in urine or blood.

(d) Much precipitation and unnecessary worry may be excluded by the use of iced distilled water in the dilution before the addition of Nessler's reagent. Warm water will invariably cause precipitation, if not immediately upon standing. Water that has attained the temperature of the room may be applicable but it will prove to be more profitable if one uses water that has been cooled in an ice bath.

(e) The addition of Nessler's reagent is of great importance. One may have good results on some days and poor ones on the next day when there seems to be no visible cause of the variation. This may be traced directly to the addition of the Nessler's reagent. This laboratory has found that the reagent may be added in one of two ways. It may be blown forcefully into the rapid whirling solution from a pipette that has a rapid delivery, or the measured amount of reagent may be poured from a cylinder into the mixture. It is important that the solution be given a strong "whirl" before the reagent is added. This is especially important when working with urine which contains a high salt content.

(f) A large number of determinations may be saved by Nesslerizing the standard first. So if precipitation is obtained, the fault may be found and corrected before ruining the unknown.

The accuracy of the experiment does not depend wholly on the obtaining of a good Nesslerization. The result is only as accurate as the measurements of the worker. If he has properly pipetted the unknown and measured with the same care, the Nessler reagent, then he may depend on his results. But there will be no comparison if he has used graduate cylinders for the dilution and the measurements. In fact the accuracy is directly in proportion with the accuracy of the measurements.

SOCIETIES

CLAY COUNTY SOCIETY

The annual meeting and dinner of the Clay County Society was held December 9, 1925, at the Bonham Hotel.

Dr. L. C. Bishop of Wichita gave a practical talk on Neurology. Dr. Phares of Wichita presented a paper on "Problems in Gastro Intestinal Diagnosis." Dr. Ebright of Wichita also gave a short talk.

After the program the Society held a short business meeting. Dr. Scott of Clifton was reinstated to membership in the Society, and the application of Dr. McIlvain was referred to the board of censors.

The following officers were elected for the ensuing year: President, Dr. X. Olsen; Vice-President, Dr. R. J. Morton; Secretary, Dr. E. C. Morgan; Treasurer, Dr. W. R. Morton; Board of Censors, Dr. E. C. Earnest, three years; Dr. G. W. Bales, two years; Dr. X. Olsen, one year.

Dr. Stillman was elected Delegate to the State Society.

G. W. Bale, Secretary.

RILEY COUNTY SOCIETY

The Riley County Medical Society met at the Gillett Hotel at 6 p. m., February 8.

The following members were present: Drs. Colt, Jr. and Sr., Ross, Groody, Evans, Reitzel, Bressler, Belle Little, Seivers and Mathews. On motion it was decided that we have scientific program.

Dr. Little read an interesting paper on Diabetes in Pregnancy. The paper was discussed by Dr. Reitzel, Dr. Colt, Sr. and Dr. Colt, Jr., and Dr. Bressler. The discussion was closed by Dr. Belle Little.

Dr. Colt Jr. gave an interesting report of two cases, and Dr. Groody and Dr. Evans each reported a case.

The committee on communication with the Attorney General gave no report. The

committee was continued. The committee on advertising also gave no report and was continued.

The President made a suggestion that we invite the dentists of Manhattan to a joint meeting at some time in the future. This was taken under advisement. The meeting adjourned.

J. R. Mathews, Secretary.

RUSH-NESS COUNTY SOCIETY

At a meeting of the Ruch-Ness County Medical Society held February 4, the following officers were appointed:

President—Dr. L. A. Latimer, Alexander, Kansas.

Vice-President—Dr. J. E. Atwood, La-Crosse, Kansas.

Secretary and Treasurer—Dr. E. N. Sules, McCracken, Kansas.

E. N. Sules, Secretary.

COFFEY COUNTY SOCIETY

The following officers were elected at the Coffey County Medical Society regular meeting February 1st:

President—H. T. Salisbury, M.D., Burlington.

Treasurer—G. R. Norris, M.D., Burlington.

Secretary—A. B. McConnell, M.D., Burlington.

We have too few doctors in the close proximity of Burlington to guarantee successful meetings so we include registered druggists and dentists, meet every Monday night, have supper together and talk over things of common interest such as peculiar cases (often some for demonstration) usage of serums, vaccines, special drugs, etc. This has been going on all winter and is very successful.

A. B. McConnell, Secretary.

PERSONALS

Dr. Paul E. Christman has opened an office in the Schweiter Building at Wichita, Kansas.

The Winfield Courier states that Dr. E. O. Smith of that city has been confined to bed for the past six weeks.

According to the local paper Dr. Fred C. Rewarts, recently located at Hanover with Dr. F. H. Rhodes, will locate at Sedan, Kansas.

A letter from Byers, Kansas, requests that a good doctor, looking for a location, be referred there.

Dr. J. C. McClintock, one of the best known surgeons in Kansas, who retired some years ago, received a fracture of the femur as the result of a fall a few days ago.

Dr. Foster L. Dennis has moved from Sylvan Grove to Dodge City where he is associated with Dr. W. O. Thompson.

Dr. Bruce A. Higgins, formerly of Lucas, has purchased the practice of Dr. Dennis and is now located at Sylvan Grove.

MEDICAL SCHOOL NOTES

Dr. E. W. Reed of Holton, Kansas, visited the Medical School recently.

Dr. Shubert Henry, '25, who was formerly located in Wichita, has been appointed Health Commissioner of Kansas City, Kansas.

Dr. T. G. Orr, Professor of Surgery, spent the week of January 18, in Baltimore, where he attended a celebration given in honor of Dr. Dean Lewis, who was recently appointed Professor of Surgery at Johns Hopkins University.

Dr. J. J. R. MacLeod of Toronto gave a talk to the students on the History of the Development of Insulin, and the same night was speaker at a banquet at the Academy of Medicine, where he talked on New Researches in Insulin.

Dr. Charles C. Stillman of Morgansville was the guest of Dr. Major at the School recently.

Dr. H. R. Wahl attended a conference of the Society for Crippled Children at Topeka recently.

Dr. A. E. Hertzler read a paper on Goitre at the last meeting of the Western Surgical Society at Wichita.

Dr. L. B. Gloyne has resigned as Health Commissioner of Kansas City, Kans., and has gone into general practice.

Dr. R. L. Haden, Professor of Experimental Medicine read a paper on the Bacteriology of Peri-apical Dental Infection at the annual clinic of the Chicago Dental Society, January 28.

Dr. H. R. Wahl, Dean of the Medical School, attended a meeting of the American Council for Medical Education in Chicago, February 15, and 16.

Dr. A. E. Hertzler read a paper at Louisville, Ky., before the American Association for the Study of Goitre on How a Simple Colloid Goitre becomes an Adenoma.

Dr. A. L. Skoog, Professor of Neuro-Psychiatry recently presented a paper before the Academy of Medicine on Nervous Manifestations in Pernicious Anemia.

Dr. A. E. Hertzler attended a meeting of

the St. Louis County Medical Society where he presented a paper on the Classification of Goitre.

Dr. Paul Gempel has been appointed on the Gynecological and Obstetrical service and will supervise a large amount of the out-patient obstetrics.

Dr. E. J. Curran, Professor of Ophthalmology and Dr. J. L. Myers, instructor in Otorhinolaryngology attended a joint meeting of the Kansas City Eye, Ear, Nose and Throat Club with the Sioux Valley Academy of Ophthalmology and Otorhinolaryngology at Omaha recently.

Mr. Harvey Jennett, a Senior Student was recently elected to Sigma Xi for work done at the University of Missouri from which he is a transfer, on "The Hydrogen Ion Concentration as a Factor in the Wassermann and Kahn."

Dr. T. G. Orr read a paper on Fractures of Femur in Children at a meeting of the Jackson County Medical Society, February 16, 1926.

At a recent meeting of the Wyandotte County Medical Society Dr. H. R. Wahl presented a series of very interesting pathological specimens. Dr. Hugh Dwyer gave a short talk and presented an interesting case of congenital syphilitic teeth. Dr. L. F. Barney talked on mediastinal carcinoma and Dr. George M. Gray discussed the subject of complicated bilateral inguinal hernias.

Miss Lorna Robinson, a graduate of the Kahler Hospital, Rochester, Minn., has recently been appointed Social Service Nurse for the Bell Memorial Hospital and the Dispensary.

DEATHS

Dr. William Francisco Lee, Humboldt, died recently at the age of 76. He graduated from the College of Physicians and Surgeons, Keokuk, in 1875.

Dr. J. H. Cushenberry, Girard, Kansas, died December 19, 1925, following a long illness. He was 72 years old. He graduated from St. Louis Medical College in 1872.

Dr. Thomas H. Johnson, Kansas City, Kansas, aged 81, was shot and killed by a robber December 23, 1925. He graduated from California Eclectic Medical College, Los Angeles in 1881.

Jennie L. Edington Eddy, Marysville, Kansas, aged 57, died January 28. Dr. Eddy graduated from the Kansas Medical College, Topeka, in 1898. She was a member of the Kansas Medical Society.

BOOKS

Medical Clinics of North America (Issued serially, one number every other month.) Volume IX, Number IV, Tulane University Number, January, 1926. Octavo of 381 pages, with 49 illustrations. Per clinic year, (July 1925 to May 1926.) Paper, $12.00 Cloth $16.00 net. Philadelphia and London: W. B. Saunders Company.

There are thirty contributors to the Tulane University number of the Clinics. Bais covers the subjects of quarton malaria, pellagra, hookworm disease and amebic dysentery. Musser discusses the clinical manifestations of sprue and its relations to pernicious anemia. Hopkins has an article on the status of some problems in leprosy. Thacker presents some views on the heart in hyerthyroidism. Holmes Smith discusses the treatment of syphilis with bismuth. Browne has an article on sickle-cell anemia. Miller gives some suggestions on the nature and treatment of the leukemias. Hagood has an article on liver function and liver function tests. The contributors to this number have covered a very wide field.

Medical Formulary by E. Quinn Thornton, M.D. Assistant Professor of Materia Medica in Jefferson Medical College. Twelfth edition revised. Published by Lea & Febiger, Philadelphia and New York. Price $2.50.

On account of the recent very extensive revision of the U. S. Pharmacopoeia the author found it necessary to rewrite this book. He has endeavored to follow the judgment of the revision committee of the Pharmacopoeia in constructing formulae. He has covered the field of medicine very well in suggesting treatment. No doubt there is a sufficient demand for a book of this kind to justify its publication. Perhaps it has its place, but it cannot fill the place of that broader knowledge of medicine which eliminates the need for ready made formulae.

Ultra-Violet Rays in the Treatment and Cure of Disease by Percy Hall, M. R, C. S. (Eng.) Published by C. V. Mosby Co., St. Louis. Price $3.75.

Considerable interest in the subject will lend encouragement to the publication of books along this line, but not all of them will afford convincing data derived from extensive clinical experience. The author establishes a logical basis for the therapeutic application of ultra-violet rays and has gone into considerable detail in the description of apparatus, technic, etc. in the treatment of various conditions. The book is not very large but is comprehensive.

Scoliosis, rotary lateral curvature of the spine, by Samuel Kleinberg, M.D., Assistant surgeon New York Hospital for Ruptured and Crippled etc. pub-

lished by Paul B. Hoeber, Inc. New York. Price $6.00.

The author first takes up the anatomy involved and then discusses extensively the classification of scoliosis by types and degrees, and the pathology. Under etiology the various factors responsible for these deformities are described. The most important feature of the work is the description of the methods used for the correction of these conditions. Too little attention has been given by the general practitioners to these cases which are sufficiently common in every community.

Abdominal Operations. By Sir Berkeley Moynihan, K. C. M. G., C. B., Leeds, London, England. Fourth edition, entirely reset and enlarged. Two octavo volumes totaling 1217 pages, with 470 illustrations, 10 in colors. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, $20.00 net.

..It has been ten years since the appearance of the last edition of this work. In this edition the work has been virtually rewritten. It begins with preliminary preparations and sterilization; then goes into the actual technic, carries through the complications and sequelae, right on to after-treatment. In the chapters on complications and sequelae, Sir Berkeley gives several tables showing, from thousands of cases, the complications that may follow operation. Numerous case histories, quoted from the author's own practice and those of other distinguished surgeons, give the book a clinical character that sets it apart from the usual book on abdominal surgery. One of such extensive experience in discussing a subject about which he has learned the facts through his own observations, always receives the attention which bespeaks confidence. No greater favor can be extended by such men than the putting of the results of their experience in a form available to the profession. This is a most comprehensive treatise on abdominal operations, the text is clear and easily understood and it is thoroughly illustrated.

Pygmalion or the Doctor of the Future, by R. M. Wilson, M. D., Ch. B. Published by E. P. Dutton & Company, 681 Fifth Ave., New York City, New York. Price $1.00.

The author has built up a rather interesting theory of the future of medicine and has based his conclusions on the hypothesis that symptoms are signs of altered reactions to life, and not of disease. Symptoms are caused by exaggerated stimuli or increased sensitiveness to stimuli and by incomplete reactions. The doctor of the future will study his patient with a view to determining these reactions to ordinary and extraordinary stimuli; and his treatment will consist largely in normalizing the stimuli and the reactions.

———B———

The Care of Syringes and Needles

The manufactures of the Luer B-D Syringes have published a little folder in which is described the sizes of syringes and needles to use for various purposes and have given some valuable instructions for the care of both syringes and needles. A few of the most timely suggestions are extracted for the benefit of those interested: "The life of the Luer Syringe may be greatly prolonged if after use it is washed in warm water or cleaned with alcohol or ether. This will prevent the barrel and plunger from sticking. Luer B-D Syringes may be sterilized by dry heat or boiling. For best results, separate barrel and plunger and if sterilized by boiling, the syringe may be put directly into hot water to hasten the sterilization. They have been heat treated to prevent breakage due to sudden changes of temperature. Do not sterilize in distilled water or any solution containing sodium bicarbonate as both will cause disintegration of the glass. To remove stains from the Luer Syringe soak in concentrated nitric acid, wash with warm water and with alcohol."

"Yale Quality needles are made in every variety and size for which there is a demand. They are made from seamless high carbon steel, also from the non-rusting metals such as gold, nickeloid and platinum-iridium. As to the relative merits of these metals it is largely dependent upon the purpose for which they are to be used.

Needles made of high carbon steel and properly tempered will take a keener cutting edge than any other metal. They also possess greater strength and stand up better in use. That is why most physicians prefer them.

Platinum-iridium needles, of 70% platinum and 30% iridium, such as we make, are quite hard, hold their points well and will not corrode or lose temper in the flame, provided they are not heated beyond a dull red color. They are also unaffected by chemicals. Platinum-iridium needles may be resharpened as often as is necessary, and if used with proper care, will give good service.

Gold and nickeloid needles are rustless and non-corrosive for most uses. They must, however, be sterilized by boiling as they will not stand the flame; the metal being slightly softer than steel or platinum-iridium, the points are more easily dulled.

After using steel needles, they should be

rinsed in alcohol or ether and dried, either with compressed air or by the use of the B-D Brunet Needle Drier. A wire dipped in oil or vaseline should then be inserted. Steel needles treated in this way will last much longer and will not rust.

When using Platinum-Iridium needles, the following caution should be observed: When sterilizing in flame, heat to a dull red which is sufficient to kill any germ life. Long continued excessive heat renders the needles brittle. Avoid lateral pressure as far as possible while introducing, as bending back and forth soon weakens the walls of the needle and causes it to break or leak.

Frequent honing of steel, platinum-iridium, gold and nickeloid on an oilstone will keep the points smooth and increase their satisfactory usefulness.

Becton, Dickinson & Co., Rutherford, N. J., will gladly send a copy of the pamphlet on request.

———R———

12th Annual Meeting of Medical Women's National Association

The Twelfth Annual Meeting of the Medical Women's National Association will take place April 18 and 19, at Dallas, Texas, in conjunction with the American Medical Association meeting.

The headquarters of the M. W. N. A. are the Hotel Baker. Dr. May Agnes Hopkins, Medical Arts Bldg., Dallas, Texas, is the chairman of the Committee on Arrangements.

Women intending to go to this meeting should promptly make reservations either through Dr. Hopkins or directly at the Baker Hotel, as there will be a big crowd there. Hotel rates are reasonable, a double room with bath averaging $6.

The terms for railroad transportation should be looked up in the A. M. A. Journal, but in many places where there are large numbers of members of the Medical Women's National Association, special cars for the women may be run.

Medical women passing through New Orleans are cpecially invited to stop over there and will meet with a cordial welcome from the New Orleans medical women, represented by Dr. Elizabeth Bass, 3513 Prytania St., who is president of the Women Physicians of the Southern Medical Association.

The Texas women, cooperating with the chairman, Dr. Hopkins, are making most attractive arrangements for the meeting. All medical women, whether members of the M. W. N. A. or not, are most cordially invited to participate in this meeting.

———R———

Research Results

Recent research in the field of medicinal chemistry, coupled with scientific physiological and clinical investigation is effecting profound changes in the practice of medicine.

Discoveries have already been announced which are changing the methods of treating diabetes, high blood pressure, and syphilis. So promising is the research work now being carried on in universities, and by large pharmaceutical manufacturers, that further important discoveries may soon be expected. It is not too much to hope that definite discoveries may even be made in the field of cancer and tuberculosis.

During the past year, announcement of the discovery of several new and important medicinal chemicals has been made by the Research Department of the Abbott Laboratories, North Chicago, Ill. Among these discoveries are Butesin Picrate, a new chemical body, combining both anesthetic and antiseptic properties.

Other important research results from the Abbott Laboratories are Butyn and Benzyl Fumarate, both of which are fully described in "New and Non-Official Remedies."

During the past ten years the following important Council-Passed medicinal chemicals have been manufactured by, and added to the list of the Abbott Laboratories: Anesthesin, Acriflavine, Barbital, Chlorazene, Dichloramine-T, Cinchophen, Neocinchophen, Neutral Acriflavine, and Procaine.

These notable additions to the list of American-made, medicinal chemicals promise much for the future cordial relations between scientific, manufacturing chemistry and progressive medical practice.

———R———

The Growing Importance of Gelatine in Infant Feeding

Some time ago, Dr. Joseph Leidy, of Philadelphia said: "The combination of gelatine and milk in infant feeding was long used by my father and the late Dr. W. Pepper. I have continued to use it during the past thirty years, and am of the opinion that it gives results when many other combinations fail."

In recent months the growing interest of the medical profession in gelatine has been noticeable. Doctors are reporting gratifying successes in preventing such infant ail-

ments as milk colic, regurgitation, vomiting, diarrhoea, excessive gas formation and constipation by 1% addition of gelatine to the milk diet.

Thomas B. Downey, Ph. D., Fellow of the Mellon Institute, Pittsburgh, has by standard feeding tests, determined that the addition of pure, plain unflavored gelatine increased the nourishment obtainable from milk by about 23%.

In discussing the digestibility of milks, especially by infants and young children, Alexander and Bullowa have pointed out that the protein content may not be considered as a unity because it is composed of two proteins casein and lactoalbumin with entirely dissimilar properties. Casein is an irreversible colloid exceedingly susceptible to coagulation by acid and rennin, while lactoalbumin is reversible and serves to protect the former.

Analysis shows that mother's milk contains a high proportion of lactoalbumin, the casein being adequately protected. Mother's milk is resistant to coagulation by acids and rennin and its greater acceptability as the food for the infant is reflected by the low mortality where the young are breast fed. On the contrary, cow's milk contains a high proportion of casein and relatively little lactoalbumin; it is poorly protected. In consequence, the casein of cow's milk is very susceptible to coagulation by acids and rennin. The mere coagulation of the casein is not the whole story, because the coagulum carries down much of the fat present, yielding masses that have a tendency to cohere and are of a texture that is quite resistant to penetration by the digestive juices. The voiding of such masses occurs too frequently in artificial feeding; nutrients are lost to the organism and it is quite probable that decomposition products of an undesirable nature are formed within these undigested curds.

This is in no way a reflection on the great nutritive value of cow's milk, which is indispensible but simply emphasizes the deterient condition it meets in the human stomach which must be neutralized to insure the complete assimilation of the milk nutriment.

From this viewpoint an obvious modification in artificial feeding is the protection of the unstable casein by the addition of suitable protective colloids.

It is of interest to give careful attention to gelatine in this place. As previously mentioned, its colloidal protection is of the highest order. It is also an excellent emulsifying agent and may function as such in either an acid or an alkaline medium. It is a common product of exceptional purity, and is an easily digested protein which is readily combined with milk. In combination with milk, the protein content is increased, food value is increased, volume is not appreciably increased and digestibility is increased. Theoretically the employment of gelatine in the child dietary is sound, and laboratory experimentation and clinical experience substantiate these conclusions.

The approved method of combining gelatine with milk is as follows:

> Soak, for ten minutes, one level tablespoonful of pure, unflavored, unsweetened gelatine (Knox) in one-half cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until geltine is fully dissolved; and add this dissolved gelatine to the quart of cold milk or the regular formula.

It must be remembered that there is a great difference in gelatine. Realizing the importance of absolute purity in any gelatine that is combined in milk or used in any way in the dietary, the laboratories of the Charles B. Knox Gelatine Company maintain a strict and constant control of the production of Knox Sparkling Gelatine. No sweetening, artificial flavor, or coloring, is ever added to this product.

———℞———

In spite of the disappointing results from the use of "Sanocrysin" in animal tuberculosis in the careful experiments carried out for the Hygienic Laboratory by Theobald Smith, Wm. H. Park and E. C. Schroeder, it is possible that some renewal of interest may arise as a result of recent papers by European physicians on the use of sodium-gold thiosulphate in human cases of tuberculosis. One naturally views with doubt the value of these reports, since these physicians have discarded the theories originally advanced and, to a large extent also, the use of the anti-toxic serum. They thus place the substance in the category of the gold salts used in the therapy of tuberculosis with which a long record of varied experiences is available. It is possible that the use of gold may have some value, but there is no evidence at hand today; hence the wisdom of American physicians in awaiting definite proof of action in animal tuberculosis before using it in the human disease will save much suffering and distress. (Jour. A. M. A., Feb. 13, '26.)

Criticism of Meat and Food Inspectors Unjustified

Senational press items based on conclusions recently made public by the National Civil Service Reform League are obviously unfair to Federal meat inspection, pure food law enforcement, and other protective services of the United States Department of Agriculture. This was the unanimous opinion of high department officials who expressed regret over the League's sweeping conclusions to the effect that public health is not properly safeguarded by inspection systems and in which fully trained and qualified Federal inspectors were subjected to the same criticism as local political appointees assigned to inspection work.

MEAT INSPECTORS SPECIALLY TRAINED

Without questioning the right of any organization to announce its opinions freely, department officials considered the press reports as extremely misleading to the public. "The facts regarding Federal meat inspection are briefly these," Dr. John R. Mohler, Chief of the Bureau of Animal Industry of the department, stated. "Veterinary inspectors engaged in the work must be graduates of a four years' course in an accredited veterinary college, then must pass a civil service examination, and in addition are especially trained for their duties. The inspection begins when live animals are received for slaughter, includes a thorough ante-mortem and post-mortem examination, then a rigid inspection of products such as smoked and cured meats, lard, and by-products, and a final inspection when meats and their products leave the inspected establishments. Owing largely to the skill and ability of livestock producers and favorable conditions for stock growing in the United States, the vast majority of the animals inspected are healthy. However, during the last fiscal year approximately 100,000,000 pounds of meat was condemned by Federal inspectors.

SERVICE IS STRICTLY PROFESSIONAL

The regulations under which inspection is conducted were established by a commission of physicians, veterinarians, sanitarians, and qualified public officials chosen with special reference to protecting public health. Federal inspection is maintained at more than 800 establishments, and the inspectors in charge will gladly explain the work to visitors. The League's assumption that the meat-inspection service, by reason of being in the Department of Agriculture, might be biased in favor of farmers or any other class, is a false assumption and is entirely unwarranted. Federal meat inspection is strictly professional and, in justice to the several thousand employees in this important service, I may state that they are loyal to their public trust, self respecting, and underserving of the sensational criticisms made. Some months ago the Bureau of Animal Industry furnished the National Civil Service Reform League with certain information asked for and was ready to assist it in obtaining authentic information, but no further assistance was requested.

INSPECTION STAMP IS GUIDE TO PUBLIC

Since Federal meat inspection applies only to meats and their products handled by establishments doing interstate or foreign business, there is some basis for the League's conclusions regarding non-federally inspected slaughter. But as the latter is only about a third of the total, sweeping conclusions were not justified. Federally inspected products can be readily identified by the familiar inspection stamp on fresh meat and by the labels of canned and package goods.

Department officials in charge of the enforcement of the Federal food and drugs act and other inspection duties of similar character note the fact that the publicity given out by the League apparently does not apply to Federal pure food law enforcement, but that the charges of inefficiency are directed against State and municipal enforcing authorities. These department officials emphatically express their disapproval of charges of such a sweeping character based upon isolated observations. In the light of their own knowledge, obtained through cooperative relationships of many years standing, they say that the vast majority of State and municipal enforcing officials are honest and efficient. Many of them are specially trained for their duties and have professional attainments of a high character.

The officials of the Bureau of Chemistry, which enforces the Federal food and drugs act, note that the report of the League upon which the press item was based, although 134 pages in length, contains but very brief references to the work of the Bureau of Chemistry, and that these statements are extremely general and in many respects inaccurate and entirely misleading. It is a fact that all employees enforcing the Federal food and drugs act are appointed under Civil Service rules and that appointments of inspectors are now made only from registers obtained from the Civil Service Commission of men who have been graduated

CARL A. MUEHLEBACH, Pres. CARL L. MUELLER, Vice Pres.-Mgr.

SNODGRASS DRUG & SURGICAL SUPPLY CO.

1118 GRAND AVE. KANSAS CITY, MO.

"OVER THIRTY YEARS OF SERVICE TO THE MEDICAL PROFESSION"

We carry complete lines of standard Drugs, Pharmaceuticals, Merck's and P. W. R. Chemicals, Biologicals, Ampoules, Lloyd's Specifics, Fluid Extracts, Tinctures, Narcotics and in fact every item required by the Medical Profession. Our Laboratory is equipped to handle orders for Special Formulae, Solutions, Stains and Reagents to your entire satisfaction.

We also carry a complete line of—

SURGICAL INSTRUMENTS AND APPLIANCES, TRUSSES, ABDOMINAL BELTS, ELASTIC HOSIERY—LABORATORY SUPPLIES AND EQUIPMENT.

Bauer & Black and Johnson & Johnson products

PROMPT SHIPMENTS—REASONABLE PRICES

Our Terms: 2%, 10 days—Net 30 days.

Prices frequently change: Therefore we do not publish a catalogue or price list but will gladly quote prices on specific items.

Your Orders or Inquiries Solicited.

Snodgrass Drug & Surgical Supply Co.

1118 Grand Ave. Kansas City, Mo.

Grandview Sanitarium

KANSAS CITY, KANSAS

The Grandview Sanitarium was completely destroyed by fire; Fifteen years active work in the sanitarium business enabled us to know our needs for the future. We have planned, built and completed what we believe to be an ideal place and are open and ready for business. Thanking our friends for their patronage in the past and assuring you we are prepared to give as good service as can be had in any sanitarium, we remain,

Very truly yours,

S. S. GLASSCOCK, M.D., Res. Supt.

A. L. LUDWICK, A.M., M.D., Asst Supt.

EDITH GLASSCOCK, B.S.
Business Manager.

Office 910 Rialto Bldg., Kansas City, Mo.

from some recognized college or university with professional qualifications of chemist.

———B———

Our National Doctor's Bill—The Public's Debt

A cursory survey of the gratuitous service given by physicians through medical institutions in the Greater City of New York, based upon the number of "free hospital days" aggregates $16,000,000 annually. This figure by no means indicates the total bill that the city controlled and private hospitals would have to pay if the doctor, like other professional men, demanded and received payment for each and every service performed. It is based upon returns from but 107 of the 140 odd medical and surgical serving institutions giving some portion of charity service.

Evaluating the physician's service nationally upon the hypothesis that outside New York City but a pro rata service in quantity is given equal to 50%, and assuming that each "Hospital Days" service was paid for at the rate of $3.00 per day, the nation's bill due the doctor would be more than $135,000,000 annually.

A survey made within the City of New York (by no means complete because many of the hospitals had not their figures at hand for this quick computation) shows the following:

Institutions in New York are roughly grouped into five classes:

Group one and two are the city—controlled hospitals—those operated and maintained by the City Government—and are composed of fifteen institutions, ten of which are under the management of the Department of Public Welfare; the others, known as Bellevue and Allied hospitals, include five institutions.

The third group are those supported in part by the Catholic Charities, of which there are twenty-two institutions. The fourth group is the United Hospital Fund group, which is financed annually, partly through drives, representing fifty-six institutions. The Independent Hospitals into which class are gathered all those institutions not included in the above four groups compose the fifth group. There are forty odd institutions in this latter group, of which number fourteen have made returns for the purpose of this survey, the other four groups being complete in their returns.

These groups show the following:

Department of Public Welfare group (10 hospitals) 1,879,871 free days.

Bellevue and Allied Hospitals (5 hospitals) 859,232 free days.

Total City controlled hospitals 2,739,103 free days.

Catholic group (22 hospitals) 322,610 free days.

United Hospital Fund group (56 hospitals) 1,563,658 free days.

Independents (14 hospitals) 395,131 free days.

Total 107 hospitals, 5,020,502 free days.

The total displayed above, 5,020,502 "free hospital days" represents the number of free days service given to free charity patients in the city's hospitals in a year.

Going a step further, it is no exaggeration to say that each patient is visited at least three times in each "hospital day" by a physician who receives no compensation whatsoever. If we compute each visit of the physician as being worth a dollar, we find that the bill would be $15,061,506 per annum. This includes the services of the consulting and outside attending physicians and surgeons, together with the services of the interns, but it is all medical or surgical service.

In taking three dollars as the equivalent of service of the consulting, attending and interne physicians, we feel we are placing the compensation at a price so far below normal for the compensation for a similar service outside the institutions as to prevent criticism or cavil of any kind.

For, when it is considered that these include the best medical and surgical brains in the country, the most expert men in the profession, who, in some instances are known to charge fees as high as $5,000 for an operation, and others who charge as low as $25 for a consultation, and then again those who charge no more than $3 per visit to outside patients, we feel that we have been almost unfair in the computation of the doctor's bill; but we will let it stand at that figure to show the prodigious sum that annually would be due the doctor if, as I have stated before, he demanded and secured even this small measure of pay for his services in public institutions.

NOW FOR THE NATIONAL BILL

As New York City represents about 1-18th of the total population of the United States, the national bill would, therefore, be eighteen times that of the City of New York, but we will not use that figure, because it might be argued by some that the measure of service given throughout the rest of the country is not in the same proportion either in quantity or quality.

Then, there are those who may even claim

that the service outside Greater New York by physicians ,through similar institutions, is greater proportionately both as to quantity and value.

(Continued in April issue.)

WANTED—Location with $6,000 to $8,000 business in good town and country with good collections. Give details of what you have. Address, "K," in care of Journal.

FOR SALE—$4000-$5000 Practice—Cash. Territory 20x18—700 population. Want married man with $600.00-$1,000.00 cash on a $2200.00 gild edge proposition. Possession any time within sixty days. One other. Business from start No trifflers. Address, J. G., care of Journal.

WANTED—A good doctor, splendid location, 15 miles from any other town, two churches, a four-year accredited high school, a progressive community and a great opportunity. Address: D. L. Browning, City Clerk, Webber, Kansas.

WANTED—Salaried Appointments for Class A physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nation-wide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

Jen Sal

RABIES VACCINE

A PHENOL KILLED, STERILE PRODUCT

Thus possessing a valuable factor of safety.

Retains full potency for 90 days from date of production, thus permitting shipment of full treatment or even carrying a few treatments on hand.

Patient may continue regular work during treatment.

Marketed in 14 to 21 dose treatments.

Code Word

Rend — Complete Human Rabies treatment, 21 doses in vials, with one all-glass aseptic syringe and 2 needles..... $21.00

Rendall — Modified Human Rabies treatment, 14 doses in vials, with one all-glass aseptic syringe and 2 needles..... 14.00

Send for Literature

SHIPPING SERVICE

Maintained every hour of the year.

Accepted by the Council of Pharmacy and Chemistry of the American Medical Association.

Produced under U. S. Government License No. 85 by

JENSEN-SALSBERY LABORATORIES INC., KANSAS CITY, MO

---

500 *Times More Germicidal than Phenol-*

Metaphen

A Contribution of Research to Medical Practice

For years, chemists in the Dermatological Research Laboratories have been engaged in the study of organic mercurials, particularly in regard to their germicidal properties. The result of this research is METAPHEN.

This powerful, mercurial antiseptic is not only 500 times more germicidal than phenol, but is **stainless, odorless,** non-corrosive and practically **non-irritating.**

METAPHEN is the ideal antiseptic and germicide for general surgery due to its exceedingly powerful destructive effects upon bacteria, particularly the staphylococci, streptococci and gonococci.

METAPHEN is decidedly superior to iodine for sterilizing the operative area as well as for treating wounds and infected surfaces. It is an ideal sterilizing agent for surgical instruments.

METAPHEN is also giving remarkable results in eye, ear, nose and throat work as well as in dentistry and general practice.

Ask your dealer or druggist for METAPHEN, D.R.L. Interesting literature wil be sent on request to

The Abbott Laboratories

NORTH CHICAGO, ILL.

Chicago New York San Francisco Seattle Toronto Bombay

THE MENNINGER PSYCHIATRIC HOSPITAL

LIVING ROOM

The living rooms are large and quiet with a cozy atmosphere and home-like contentment.

MAIN DINING ROOM

The meals are attractive and palatable, conforming to the patients' needs.

SHOWER AND SPRAY TREATMENT

The shower and spray treatments are uptodate in apparatus and methods.

IMMERSION TREATMENTS

These treatments are one of the best forms of sedation.

A Private Sanatorium for the treatment of the nervously and mentally sick, according to the most approved modern methods.

Fully equipped for hydrotherapy, (showers, spray, Scotch douche, Sitz bath, prolonged neutral immersions), and electrotherapy.

These treatments are given by a graduate masseuse and physiotherapist.

The matron and supervisor of the nurses plans the attractive meals and palatable dishes served to the patients.

Our capacity is small (limited to fifteen patients), assuring the personal attention required.

MEDICAL STAFF:

Chas. F. Menninger, M. D.
Karl A. Menninger, M. D.
Wm. C. Menninger, M. D.

Associated with the

MENNINGER NEUROPSYCHIATRIC CLINIC

TOPEKA, KANSAS

Open All the Year

with Pluto Spring Flowing All the Time

French Lick, Ind.

No Sanitorium

SIX HUNDRED AND FIFTY ROOMS (ALL OUTSIDE) IN OUR HOTEL

A place where your patients can find attractive surroundings with adequate medical service and supervision.

Dunning S. Wilson, M. D., Ky. U. of L., '99, is in charge of the Medical Department, which is equipped with complete X-ray, actinic ray, chemical and bacteriological laboratories for diagnostic and therapeutic work.

When your patients are tired of home or hospital send them to French Lick for final recuperation.
Write for Booklet.

Green Gables
THE
DR. BENJ F BAILEY
SANATORIUM
Lincoln, Neb

This institution is the only one in the Central West with separate buildings situated in their own ample grounds, yet entirely distinct and rendering it possible to classify cases. The Main Building being fitted for and devoted to the treatment of non-contagious and non-mental diseases, no others being admitted. The other, Rest Cottage, being designed for and devoted to

THE EXCLUSIVE TREATMENT OF SELECT MENTAL AND NERVOUS CASES

requiring for a time watchful care and special nursing.

Send For Illustrated Pamphlet

BEVERLY FARM, Inc.

(Established 1897, Incorporated for Perpetuity 1922).

HOME and SCHOOL

for

Nervous and Backward Children

220 Acres—six buildings—capacity 80 children.

A School and Gymnasium Building Projected.

HABIT Training A Specialty.

Recent extensions admit accepting a few suitable permanent cases.

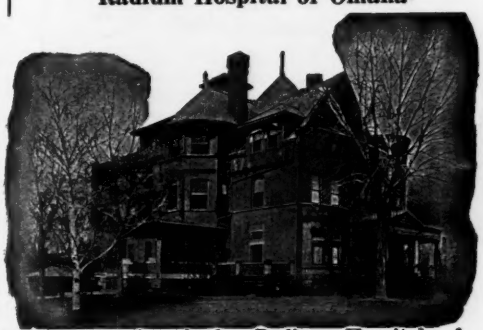
Terms on Application.

Address all communications to

Dr. Wm. H. C. Smith, Supt.,
Godfrey, Madison Co., Ill.

Dr. Groves B. Smith, Asst. Supt.
Theodore H. Smith, B. A., Secy.

Radium Hospital of Omaha



The records of the Radium Hospital of Omaha show that in cases of localized cancer of the lip and eyelid and other localized external forms of malignancy, the percentage of cases free from signs and symptoms of the disease after from three to ten years, in patients not dead of other diseases, is over 80 per cent. As many of these cases were recurrences after other less effective methods of treatment it seems reasonable to conclude that the intelligent use of radium by those having adequate quantities of the element and a high degree of skill in its use is the most effective weapon against localized cancer or sarcoma.

D. T. QUIGLEY, M.D.
Director
34th and Farnam Sts. Omaha, Neb.

*Increasing the Nourishment Yield of Infants' Milk

EVERY physician knows that the delicate infant organism is frequently unable to properly digest the casein and the fat of cow's milk. This necessitates various forms of modification.

Through clinical tests and observations, supplemented by exhaustive bio-chemical research at the Mellon Institute of Pittsburgh, it was proven that 1% of pure, unflavored Gelatine dissolved and added to cow's milk will largely prevent regurgitation, gas, colic, diarrhea, and malnutrition resulting from the excessive curdling of the casein by the enzyme rennin and hydrochloric acid of the gastric juices.

This protective colloidal ability of Knox Sparkling Gelatine increases the nourishment obtainable from the milk by about 23%, (which is also of great value in the strength restoration of adults).

The approved method of adding gelatine to milk is as follows:

Soak, for ten minutes, one level tablespoonful of Knox Sparkling Gelatine in one-half cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until gelatine is fully dissolved; add this dissolved gelatine to the quart of cold milk or regular formula.

Note: Knox Gelatine blends with all milk formulas. The protective colloidal and emulsifying action promotes digestion and absorption of the milk nutrients.

WHERE KNOX SPARKLING GELATINE HAS PROVED HIGHLY EFFECTIVE

* **In infant feeding for full digestion of milk and the prevention of curds, regurgitation and vomiting.**

2. For growth promotion in infant and child feeding.
3. In stubborn cases of malnutrition.
4. In the treatment of stomach disorders and intestinal putrefaction.
5. In the dietetic treatment of diabetes.
6. In the dietary of tuberculosis patients.

KNOX SPARKLING GELATINE

"The Highest Quality for Health"

From raw material to finished product Knox Sparkling Gelatine is constantly under chemical and bacteriological control, and, furthermore, is never touched by human hand.

Send This Coupon

Register your name with this coupon for the laboratory reports on the dietetic value of Knox Sparkling Gelatine

KNOX GELATINE LABORATORIES

423 Knox Avenue, Johnstown, N. Y.

Please register my name to receive, without charge, results of past laboratory tests with Knox Sparkling Gelatine, and future reports as they are issued.

The

Lattimore Laboratories

J. L. LATTIMORE, A. B., M. D., Director

SEROLOGY, BACTERIOLOGY, PATHOLOGY, PARASITOLOGY, BLOOD CHEMISTRY

We have associated with our office, Mr. A. C. Keith, a Chemist and Toxicologist, and we will be glad to consult with you about any chemical problem. Post-mortem examinations, with complete chemical examination of any organ or tissue can be reported upon in 48 hours.

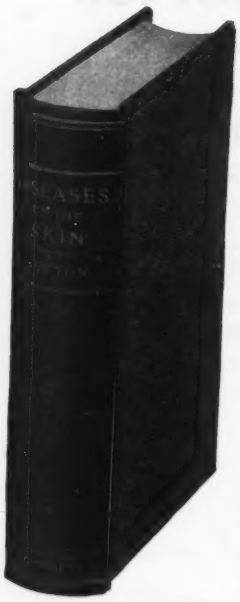
Containers furnished upon request. Wire report if desired.

Topeka, Kansas	El Dorado, Kansas	Sedalia, Mo.	McAlester, Okla.
J. L. Lattimore	J. C. McCommas	H. C. Ebendorf	W. J Dell

The WILLOWS
MATERNITY
SANITARIUM
A superior seclusion maternity home and hospital for unfortunate young women. Patients accepted any time during gestation. Adoption of babies when arranged for. Prices reasonable.
Write for 90-page illustrated booklet.
The Willows
2929 Main St.
Kansas City, Mo.

Bigger and Better Than Ever

There are 1214 pages of text and 1069 original illustrations in the new



Sutton's (FIFTH REVISED AND ENLARGED EDITION)

DISEASES OF THE SKIN

RICHARD L. SUTTON, M.D., LL.D., F.R.S. (Edin.),

Professor of Dermatology, University of Kansas; Assistant Surgeon U. S. Navy, retired; Member of the American Dermatological Association; Dermatologist to the Santa Fe Hospital Assn., and to the Christian Hospital, Kansas City, Mo., 1214 pages, 6½x10 inches, with 1069 illustrations and 11 full-page plates in colors. Fifth revised and enlarged edition. Price, silk cloth binding, $10.00.

FOR YOUR PATIENT'S SAKE—ADD THIS BOOK TO YOUR LIBRARY—AND CONSULT IT.

Avail yourself of the opportunity to have at hand at all times the teaching and the advice of one of America's formost dermatologists. Differential diagnosis with illustrations showing how closely different diseases may simulate each other, pathology gone into minutely and illustrated by cross sections of lesions that really illustrate and then suggestions relative to treatment with formulas and prescriptions actually used by the author—these are the features that make this a really great book.

Leading Medical Authorities Everywhere Are Unanimous in Their Praise of This Book

The Lancet (London).

"The first edition appeared in 1916 and quickly won recognition for itself as one of the leading dermatological textbooks. The present volume is admirable in every way. It contains nearly a thousand photographic illustrations and 11 color plates. The photographs are excellent; we know of no other published collection that can compare with them. The text is worthy of the illustrations, and has been brought thoroughly up-to-date without rendering the book unwieldly. To the advanced student and practitioner, if only for its wealth of illustrations, this book should make a strong appeal, and the dermatologist will regard it as a most valuable work of reference."

Archives of Dermatology and Syphilology:

"In this third edition Sutton has succeeded in presenting an eminently complete reference book on dermatology and syphiology. The completeness of the work is reflected in several ways; practically all recognized dermatoses are discussed..some briefly, others at length..according to their relative importance and frequency. The author has evidently spared no effort to present a thoroughly and eminently authoritative book destined to be of great value not only to the student and practitioner, but also to the research worker and writer."

Journal of Amer. Med. Ass'n.

"Dr. Sutton is one of the most indefatigable ... American dermatologists; a treatise on dermatolo... naturally comes as a sequence of his labors. He h... been an independent investigator, but his work h... been constructive and not iconoclastic. As would ... expected, therefore his treatise, while showing h... independence of view, is along conservative lines, a... is free from the unpardonable sin in a textbook ... being controversial. This work is well done and it ... highly recommended for study to the practitioner w... would obtain a grasp of the subject of dermatolo... as a whole, as distinguished from a smattering know... edge of a few dermatoses."

British Journal of Dermatology:

"Dr. Sutton's book is so well known and appreciat... that nothing is wanting to recommend this new ... tion to those familiar with the earlier works. T... illustrations are so numerous as to entitle the w... to be classified as an atlas of skin diseases; in fa... there are few atlases which contain so complete ... pictorial record of the whole field of dermatolo... The author and publishers are to be congratulat... not only on having secured such a large collection ... on the excellence of their reproduction."

Don't Delay—Order This New Book Today

C. V. Mosby Co., Medical Publishers

3616 Washington Blvd., St. Louis, Mo.

Send for a copy of our new 96 page catalog.

Cut Here and Mail Today

C. V. MOSBY COMPANY,
Metropolitan Bldg., St. Louis, Mo.

Date.....

Send me a copy of the new fifth edition Sutton's "Diseases of the Skin," for which I enclose $10.00, or you may charge the account.

Name .....

Street .....

Town .....State.....

Jou...

"New, Something New"--At Ease---B & W Clavicle and Arm Support

Showing first position Clavicle Fracture. Note: The arm does not rub against the body.

Showing back view only using 3 pieces of adhesive and straps for any adjustment to raise the elbow.

X-RAY PICTURE of Clavicle Fracture using a B & W Clavicle and Arm Support 4 weeks.

Showing a support for a broken arm or sprain. The arm can be elevated to suit the patient.

The B & W Clavicle and Arm Support eliminates the excessive use of Adhesive Tape with a Broken Clavicle; and the necessity of using a towel or piece of muslin for a support with a large knot protruding for a Broken Arm, Wrist or Sprain and tends to rest the injured member. It gives comfort to the patient, and is so arranged that it can be adjusted to different lengths and positions.

Necessity was the cause of this Invention, at last an inspiration in torture and desperation. The "Idea" was conceived that is now fashioned into the AT EASE B & W CLAVICLE and ARM SUPPORT. Recommended by Physicians and Surgeons. Manufactured for Adults and Children, for right or left arm, by

Patent Applied For, Others Pending

PHYSICIANS SUPPLY CO., 1007 Grand Ave., Kansas City, Mo., Distributors.

JAMES Y. SIMPSON, M. D.,
Neurologist and Addictologist

HERMON S. MAJOR, M. D.,
Neuro--Psychiatrist

SIMPSON-MAJOR SANITARIUM

3100 Euclid Avenue, Kansas City, Mo.

Nervous Diseases. Selected Mental Cases. Alcohol Drug and Tobacco Addictions

Electricity Heat Water Light Exercise Massage Rest Diet Medicine

Beautifully situated in a pleasant residence section of the city. Fully equipped and well heated. All pleasant outside rooms. Large Lawn and open and closed porches for exercises. Experienced and humane attendants. Liberal, nourishing diet. Resident physician in attendance day and night.

Trade Mark Registered **STORM** Trade Mark Registered

Binder and Abdominal Supporter

(Patented)

Trade Mark Registered

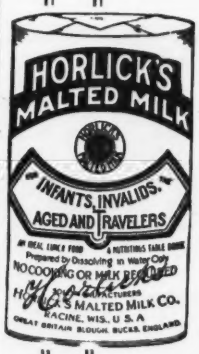
Trade Mark Registered

For men, Women and Children

For Ptosis, Hernia, Pregnancy, Obesity, Relaxed Sacro-Iliac Articulations, Floating Kidney, High and Low Operations, etc.

Ask for 36-page Illustrated Folder
Mail orders filled at Philadelphia only—within 24 hours.

KATHERINE L. STORM, M. D.
Originator, Patentee, Owner and Maker
1701 Diamond St. Philadelphia


HORLICK'S
MALTED MILK
INFANTS, INVALIDS & AGED AND TRAVELERS
NO COOKING OR MILK REQUIRED
HORLICK'S MALTED MILK CO.
RACINE, WIS., U. S. A.
GREAT BRITAIN SLOUGH, BUCKS, ENGLAND

HORLICK'S

The ORIGINAL Malted Milk

In the Dietetic Treatment of Influenza-Pneumonia

A very nutritious and sustaining diet during illness and a strengthening food-drink for the convalescing patient.

Avoid Imitations Samples Prepaid

Horlick's Malted Milk Co.
RACINE, WIS.

As a General Antiseptic

in place of

TINCTURE OF IODINE

Try

Mercurochrome-220 Soluble

(Dibrom-oxymercuri-fluorescein)
2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning
BALTIMORE, MD.

SAVE MONEY ON

YOUR X-RAY SUPPLIES

Get Our Price List and Discounts Before You Purchase

WE MAY SAVE YOU FROM 10% TO 25% ON X-RAY LABORATORY COST

Among the Many Articles Sold Are

X-RAY FILM, Duplitized or Dental, Eastman, Superspeed or Agfa Film. Heavy discounts on standard package lots. X-Ograph, Eastman, Justrite and Rubber Rim Dental Film, fast or slow emulsion.

BRADY'S POTTER BUCKY DIAPHRAGM insures finest radiographs on heavy parts, such as kidney, spine, gall-bladder or heads. Curved Top Style—up to 17x17 size cassetts. $250.00
Flat Top Style—holds up to 11x14 Cassetts. 175.00

DEVELOPING TANKS, 4, 5 or 6 compartment stone, will end your dark room troubles. Ship from Chicago, Brooklyn, Boston or Virginia. Many sizes of enameled steel tanks.

INTENSIFYING SCREENS—Patterson, T. E., or Buck X-Ograph Screens for fast exposure alone or mounted in Cassettes. Liberal discounts. All-metal cassettes. Several makes.

If you have a machine have us put your name on our mailing list.

Geo. W. BRADY & CO.
785 So. Western Ave.
CHICAGO

New Type

Portable Telatherm

FOR

MEDICAL DIATHERMY
SURGICAL DIATHERMY
ELECTRO-COAGULATION
DESICCATION
BLADDER FULGURATION
AUTO-CONDENSATION
HIGH FREQUENCY
EFFLUVE

Send for Bulletin No. 703

See Our Exhibit at the Western Physiotherapy Meeting, New President Hotel, K. C., Mo., Apr 8 to 16

HETTINGER BROS.

KANSAS CITY
ST. LOUIS HB TULSA
OKLAHOMA CITY

The Management of an Infant's Diet

Constipation

Food not adapted to an infant's digestion, elements not in proper proportion to normal or individual needs, overfeeding, underfeeding, sluggish peristalsis, are the most common causes of constipation in the artificially-fed baby.

Every one of these determined factors being commonly associated with the daily intake of food, treatment other than dietetic is rarely necessary or advisable.

Suggestions that point out the procedure to be followed in adjusting the diet to overcome constipation due to the stated causes are embodied in a 16-page pamphlet, which will be sent to physicians upon request. The suggestions offered are based upon careful observation extending over a long period and should be of much service to every physician who is at all interested in infant feeding.

Mellin's Food Co., 177 State Street Boston, Mass.

The Six-Sixty—

the Choice of the
PROFESSION

Since its introduction less than a full year ago, the Six-Sixty X-Ray generator has been taking the medical profession by storm.
WHY?

Because it gives greater uniformity and accuracy in diagnosis.

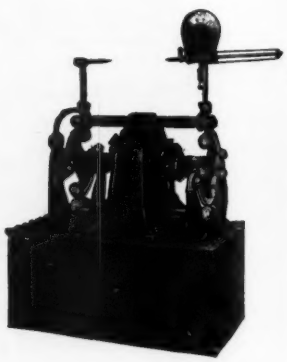
Because it so readily adapts itself to ALL classes of diagnostic work.

Because it has a greater tube life.

Because it provides for faster radiographic results.

Because it offers ALL the convenience and flexibility of the larger machines.

The remote control stand contains all meters, regulators and the timer. The transformer and rectifier unit is easily mounted on a shelf where space is limited. Investigate the Six-Sixty!



Write or Wire for Complete Details

W. A. Rosenthal X-Ray Company

412 East 10th St. — **Kansas City, Mo.**
306 Medical Arts Bldg. — **Oklahoma City, Okla.**

Pasteur Treatment 18 doses, ready for administration at the physician's office. Sent immediately with full directions, on receipt of telegram. Financial arrangements can be made later. Price $25. See Note.

Dependable Wassermann and other complement fixation tests, made with standardized reagents proper control and correct technic. Price $5.00. Syringes for collection of blood on application.

General Laboratory Work. Tissue examinations, $5.00 Autogenous vaccines, 20 C. C. in ampouls, $5.00, culture tubes sent on application. Urinalysis, Sputum examination, and Widal tests, $3.00. Guinea-pig inoculations for diagnosis of tuberculosis, including keeping and autopsy. $15.00.

NOTE..The virus for Pasteur Treatment deteriorates rapidly. We are not sub-agents for a virus of Eastern manufacture but supply you with a fresh virus manufactured by ourselves under U. S. Government License No. 49. Phone or telegraph orders to.

DR. W. T. McDOUGALL,
KANSAS CITY, KANSAS

Phone Drexel 0239
Phone Fairfax 0685

422 Brotherhood Block

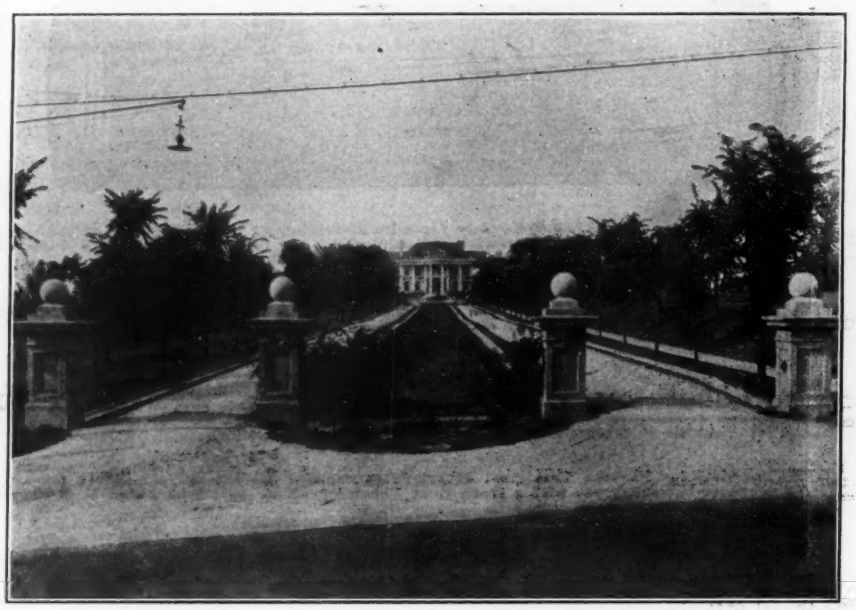
Your Eyes and Your Oculist, M. D.

Write us for this interesting booklet and full information how you can be benefitted by our educational advertising campaign without any expense to yourself.

O. H. GERRY OPTICAL COMPANY

Optical Work for the Oculist Exclusively KANSAS CITY, MISSOURI

Subscribe for
The Journal of The Kansas Medical Society



Home of the

G. Wilse Robinson Sanitarium Co.

Kansas City, Missouri

8100 Independence Road — Office 937 Rialto Building

G. Wilse Robinson, M.D., Superintendent and Neuro-Psychiatrist
Dr. B. Landis, Resident Neuro-Psychiatrist

Nervous and Mental Diseases

Alcoholics and Drug Addicts
Will be received

The Sanitarium is located on a tract of twenty-five beautiful acres, in Kansas City, Missouri.

The buildings are commodious and of very attractive architecture.

Rooms with private bath can be provided.

The treatment embraces all of those therapeutic agents which Medical Science has determined to be most beneficial in the restoration of such patients as are received.

Recreation and entertainment are important factors in the rehabilitation of nervous and mental cases.

An indoor gymnasium, short golf course, tennis courts, croquet grounds, etc., will be available for the use of the patients.

The Sanitarium is twenty minutes drive from the Union Station and can be reached by automobile or the Kansas City-Independence line from the Union Station or Sheffield Station, Kansas City, Missouri or Independence, Missouri.

For further information communicate with the Superintendent at Office or Sanitarium.

Physicians find Squibb Professional Service Representatives always ready to be of service to them in answering inquiries concerning any Squibb Product.

A visit from the Squibb Professional Service Representative

"Doctor Haynes, do you not find it inconvenient to prepare your own solutions of arsphenamine?"

"Yes, but I feel obliged to do so as thereby I am assured a safe product for administration."

"Would it not be a great saving of your *time* and *labor* if you could obtain, *already prepared* and *ready to inject*, a *safe* solution of Arsphenamine marketed under the *Squibb Label?*"

"It certainly would. Is there such a product?"

"Why yes, E. R. Squibb & Sons market such a product under the name—

SOLUTION OF ARSPHENAMINE SQUIBB.

"This preparation is a pure, stable and accurately alkalinized, aqueous solution of Arsphenamine Squibb. The entire process of preparing the solution is conducted under nitrogen or vacuum, thus eliminating any danger of oxidation.

"In other words, Doctor Haynes, in SOLUTION OF ARSPHENAMINE SQUIBB, there is offered to you for your use a safe and convenient means of administering Arsphenamine. No troublesome alkalinization and attendant danger of oxidation, no expensive apparatus and reagents to purchase, easily administered in the office or the patient's home with no apparatus other than that supplied for the ampul of the Solution.

"SOLUTION OF ARSPHENAMINE SQUIBB is sold in 80-cc. and 120-cc. ampuls containing 0.4 and 0.6 Gm. of Arsphenamine respectively. The *apparatus* for injection, consisting of a sterilized needle, tubing and filter bulb, is supplied in a separate package, complete and ready for immediate use."

E·R·SQUIBB & SONS, NEW YORK

MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

VICTOR

Ultra-Violet Technique *Simplified* by Victor Quartz Lamps

In developing Victor quartz lamps for ultra-violet therapy the Victor policy of keeping constantly in mind the technical needs of the physician has been strictly followed. The physician is not required to adapt his technique to the apparatus, because the Victor organization has adapted Victor quartz lamps to his requirements.

As a result Victor air-cooled and water-cooled quartz lamps are so readily installed and so easily manipulated that the correct method of applying ultra-violet rays in the treatment of many conditions common to every practice is quickly acquired.

VICTOR X-RAY CORPORATION
Main Office and Factory: 2012 Jackson Blvd., Chicago
33 Direct Branches—Not Agencies—Throughout U. S. and Can.

Authoritative papers on ultra-violet therapy have been reprinted by the Victor X-Ray Corporation for the benefit of physicians who have not ready access to the original sources. These papers will be sent without charge on request. They constitute a textbook on the subject.

VICTOR X-RAY CORPORATION, A-248
Publication Bureau, 2012 Jackson Blvd., Chicago

Please send me descriptive bulletin on Victor Quartz Lamps. Also reprints of authoritative papers on Ultra-Voilet Therapy. I am interested especially in the treatment of .....

I am also interested in Victor Apparatus for
- ☐ *Medical Diathermy*
- ☐ *Surgical Diathermy*
- ☐ *Phototherapy*
- ☐ *Ionic Medication*
- ☐ *Sinusuidal Therapy*

Name.....

Street.....

Town..... State.....